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Fall 2001

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FALL 2001

IN THIS ISSUE

The cover of our fall issue is dedicated to all of the natural and cultural resource professionals across the Navy who are meeting the challenge of combining environmental stewardship with readiness. Claudine Laabs, a contributing photographer and active member of the Florida Audubon Society, took the photograph of the brown pelican for our cover.

This issue includes a sampling of the diverse efforts underway across the Navy to protect natural and cultural resources. We regret that we were not able to include all of the great stories we considered. We hope to share more of your success stories in future issues of Currents magazine.

With this, our final issue of fiscal year 2001, we are unveiling a new four-color design for the magazine. This design allows us to take more creative discretion with the layout of our stories and leverage the hundreds of photos that we receive. We hope you will find this design promotes a better "read."

You should also be aware that past issues of Currents magazine are now accessible at https://www.enviro-navair.navy.mil. You can also subscribe to Currents on-line at this address.

Finally, we have created a special pullout section for this issue. This pullout consists of a poster developed by our colleagues at the Naval Facilities Engineering Command, entitled "Protecting Coral Reef Ecosystems." On the reverse side of this poster, we have included two posters from a collection of four posters that the Naval Air Systems Command developed in cooperation with the Florida Audubon Society - one poster of two Sandhill cranes and a second poster of a Great Egret. (More information about these posters is available on our inside back cover.)

DEPARTMENTS

Gary Whitfield, Editor
Building 168, Second Floor
Naval Aviation Depot
Naval Air Station
Jacksonville, FL 32212-0016
Telephone: (904) 542-0516, x-124
DSN: 942-0516, x-124
Facsimile: (904) 542-0078
E-mail: whitfieldgb@navair.navy.mil

Kathi Jones, Associate Editor
c/o Commanding Officer
Naval Facilities
Engineering Service Center
Code ESC 423
Port Hueneme, CA 93042-4370
Telephone: (805) 982-4899
DSN: 551-4899
Facsimile: (805) 982-4832
E-mail: joneskf@nfesc.navy.mil

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Trends of the Environment

Baucom Retires, Nolan Takes N45 Helm

Rear Admiral (RDML) Larry C. Baucom, director of the Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division (CNO N45), retired from the U.S. Navy on 31 August, 2001. RDML Roger Thomas Nolan took over his position on 5 September.

Hailing from Columbia, South Carolina, RDML Baucom is a 1970 graduate of the U.S. Naval Academy and holds master's degrees in Systems Management from the University of Southern California and in National Security and Strategic Studies from the Naval War College. He received his Naval Flight Officer wings in August 1971.

RDML Baucom came to CNO N45 with a true fleet perspective, built upon decades of working as a leader on the operational side of the Navy. He developed a four-pronged approach for Navy's environmental protection and compliance efforts that has empowered N45 and others within the Navy's environmental community to create solutions that balance environmental stewardship with fleet readiness.

RDML Roger Thomas Nolan, USNR, hails from Caldwell, NJ, and earned his commission from the U.S. Naval Academy with the Class of 1973. He comes to CNO N45 from the position of Assistant Deputy Chief of Naval Operations for Readiness and Logistics (N4BR). RDML Nolan brings a unique private sector perspective and management expertise to N45's programs.

In 1979, Nolan resigned his regular commission and accepted a commission in the Naval Reserve. During his tenure, he has served as Deputy for Mission Effectiveness REDCOM Region One; Commanding Officer, Commander Iceland Defense Force 101; Commanding Officer, Space and Naval Warfare Systems Command HQ 101; Commanding Officer, Personnel Mobilization Team 101; Commanding Officer, Shore Intermediate Maintenance Activity, Newport Detachment 201; Executive Officer of three waterfront units in Newport; and Readiness Analyst on the staff of Commander, Naval Reserve Readiness Command Region One.

In civilian life, Nolan is a founder and Executive Vice President of a Newport, R.I. software and engineering management and graphics design services firm, Aquidneck Management Associates, Ltd. He is also active in his community through the United Way, and with school-based programs for disadvantaged youth and programs for senior citizens.

POC:

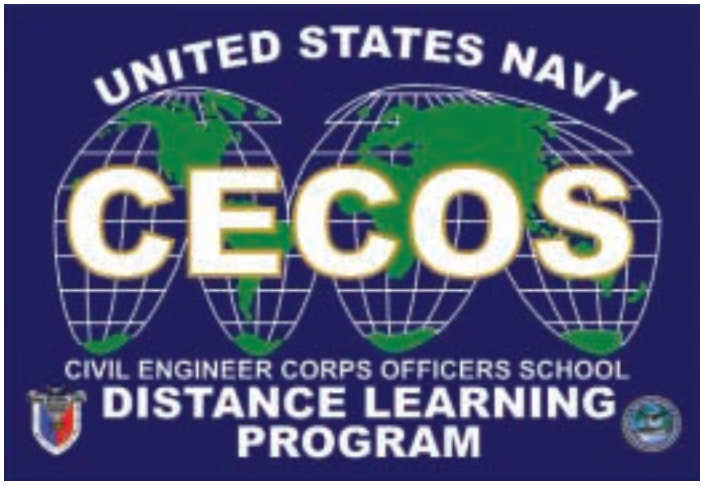
Master Chief Fred Engle
Public Affairs Officer,
Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division (OPNAV N45)
703-604-5412
DSN: 664-5412
Engle.Frederick@hq.navy.mil

Have Training - No Need to Travel
CECOS Announces Distance Learning Program

The Civil Engineer Corps Officers School at Port Hueneme is proud to announce the release of a number of environmental training courses, modules, and environmental tools to help Navy personnel become better informed on environmental issues.

With travel dollars at a premium and school seats becoming scarce you now have another option to receive quality environmental training right in your own shop or office. And it is all free.

There are currently more than two dozen training modules and tools available and more are being made that will be released this fall. The current list of training materials and tools available include:



Interactive Courses

- Hazardous Waste Annual Refresher (4 Modules/1 CD)
- Introduction to Hazardous Waste Overseas (12 Modules/1 CD)

Interactive Training Modules

- Handling and Disposition of Batteries Module
- Handling and Disposition of Oil and Oily Rags Module
- Handling and Disposition of Paints and Solvents Module

Computer Based Video/CD

- Health and Environmental Risk Communication (Video/CD)
- National Environmental Policy Act (Video/CD)
- Overview of Environmental Laws and Regulations (Video/CD)
- Environmental Law and Liability (Video/CD)

Compliance Tool

- RegFinder Series (5090.1B CH 2 Chapter 22 & 27)

To take advantage of this unique training opportunity, visit the CECOS homepage at http://www.cecos.navy.mil, click on Distance Learning and follow the ordering instructions.

Stored on a computer disk that accesses the Internet, the interactive courses and training modules can be tailored to reflect state laws and local policies and procedures specific to each installation or activity. If you are an installation or activity environmental compliance manager and would like additional information on tailoring CECOS computer-based courses to your installation or would like to schedule a technical assist visit, contact Rick Montgomery.

POC:

Dr. Rick Montgomery
Civil Engineer Corps Officers School
805-982-2383
DSN: 550-2383
MontgomeryRC@cecos.navy.mil

Trends of the Environment

Navy GIS Tool Will Analyze Environmental Impacts of At-sea Training

The Navy is developing a planning tool that will plug marine mammal migration routes, meteorological data and other facts into a geographic information system (GIS) in order to determine potential environmental impacts from planned training exercises at sea.

The so-called Environmental Information Management System (EIMS) will use existing data sets from government agencies such as the National Oceanic and Atmospheric Administration, research institutes, state agencies and others, and insert that information into a GIS-based software system, according to Navy sources. While the GIS technology is not new, its application as a planning tool for Navy at-sea exercises is new, a Navy spokesman says. A GIS software program provides a way to analyze data by displaying it through maps that contain layers of different types of information.

"Last November, the Atlantic Fleet Commander clearly articulated a priority need for a single, comprehensive Navy GIS-based information management system and databases, including standard operational planning and scheduling requirements as well as data on sensitive environmental and natural resource issues in ranges and [operational areas]," according to the written version of a speech given by then-Rear Admiral Larry Baucom June 26 at an environmental conference held by the U.S. Environmental Protection Agency (EPA) Region IV, the Department of Defense (DoD) and states. Baucom is a former director of the Chief of Naval Operations' Environmental Protection, Safety & Occupational Health Division.

The Navy spokesman says the Pacific Fleet has also weighed in and stated its requirement to have such a system in place to use for planning exercises in operational areas with sensitive resources. While the data currently exists, it has not been user-friendly, requiring a lot of coordination and time to obtain, the source says. Often, determining potential environmental impacts of planned exercises involves calling regulators, the source says. With the GIS-based system, that information will already be available to the Navy, according to the source. Staff working on the project planned to brief Atlantic Fleet officials July 16. The system, once finalized, will be applicable Navy-wide, according to the spokesman.

"The system will provide fleet operational and environmental planners access to relevant environmental data including natural and cultural resources, meteorological and hydrographic data, and standard mapping functions allowing the environmental planner to determine potential impacts and plan proven mitigation strategies," Baucom's speech says. This analysis will be done in concert with planning for the exercise, he said.

In using the system, the Navy's priorities will be focused on data related to endangered and threatened species, the spokesman says. The Navy will use the tool in both traditional operational areas as well as new areas in which the Navy plans to operate. The types of data sets used include nautical, wetlands, meteorological, and species distributions for birds, marine mammals and sea turtles, as well as satellite imagery to gather information such as water temperature and color, the spokesman says.

"Our environmental planners will access data capable of addressing any environmental issues associated with air, air-to-ground, land, and underwater, surface, amphibious, and littoral warfare issues," Baucom says.

The effort to develop the EIMS prototype "is an unprecedented combination of capabilities including impact and mitigation methodologies, environmental protection expertise, fleet operations and planning all to support operational readiness," Baucom says.

Baucom explained that an operational planner begins the process by providing the date, location and type of event. "The environmental planner uses the system to evaluate potential environmental concerns by accessing environmental sensitivity and species distribution data," the speech says.

The key is to continuously update the data, the spokesman says.

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POC:

Master Chief Fred Engle
Public Affairs Officer, Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division (OPNAV N45)
703-604-5412
DSN: 664-5412
Engle.Frederick@hq.navy.mil

SERDP and ESTCP to Host Annual Technical Symposium and Workshop

The Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) will hold the Partners in Environmental Technology Technical Symposium & Workshop, "Building on Past Successes to Address Emerging Issues," 27-29 November, 2001 at the Marriott Wardman Park Hotel in Washington, D.C.

The two and one-half day event will feature comprehensive technical sessions that will illustrate how the Department of Defense is addressing emerging environmental issues by building on past successes in the development of innovative environmental technologies. Topic areas include the following: compliance technologies to reduce the environmental impact of current activities; pollution prevention technologies to reduce or eliminate environmental impacts in defense manufacturing through substitution, recycling, and resource conservation; cleanup technologies to mitigate the current and future liability of past activities through remediation; and conservation technologies to preserve natural resources while sustaining military operations. Other highlights include more than 100 posters supporting this year's technical program theme, display booths offering funding information about related research programs, a special session providing a summary of SERDP and ESTCP program development and opportunities to conduct research and demonstrations, and networking with more than 500 expected environmental professionals.

For additional information, visit www.serdp.org or www.estcp.org or call 703-736-4548.

POC:

- Jen Rusk, Registrar
- SERDP and ESTCP Support Office
- 703-326-7801
- jrusk@hgl.com

DoD EPA DOE SERDP
Strategic Environmental Research and Development Program

ESTCP

NEAT News Expands

The Navy Environmental Afloat/Ashore Today (NEAT) News has expanded its afloat focus to include shore-side environmental safety and stewardship promotion. The Navy Inventory Control Point (NAVICP) Asset Protection and Pollution Prevention Department of the Engineering and Product Support Directorate publishes NEAT News. NEAT News is an information resource that provides up-to-date information on the many NAVICP environmental program initiatives.

NEAT News issues are archived on the web for convenient viewing. Visit http://www.denix.osd.mil, click on "Public Menu", then "News and Information", then click on "Navy" and scroll until you reach NEAT News. If you would like to be added to the NEAT News hardcopy mailing list, please contact Margie Cannon.

POC:

- Margie Cannon
- Navy Inventory Control Point
- 717-605-1362
- DSN: 430-1362
- margaret_k_cannon@icpmech.navy.mil.

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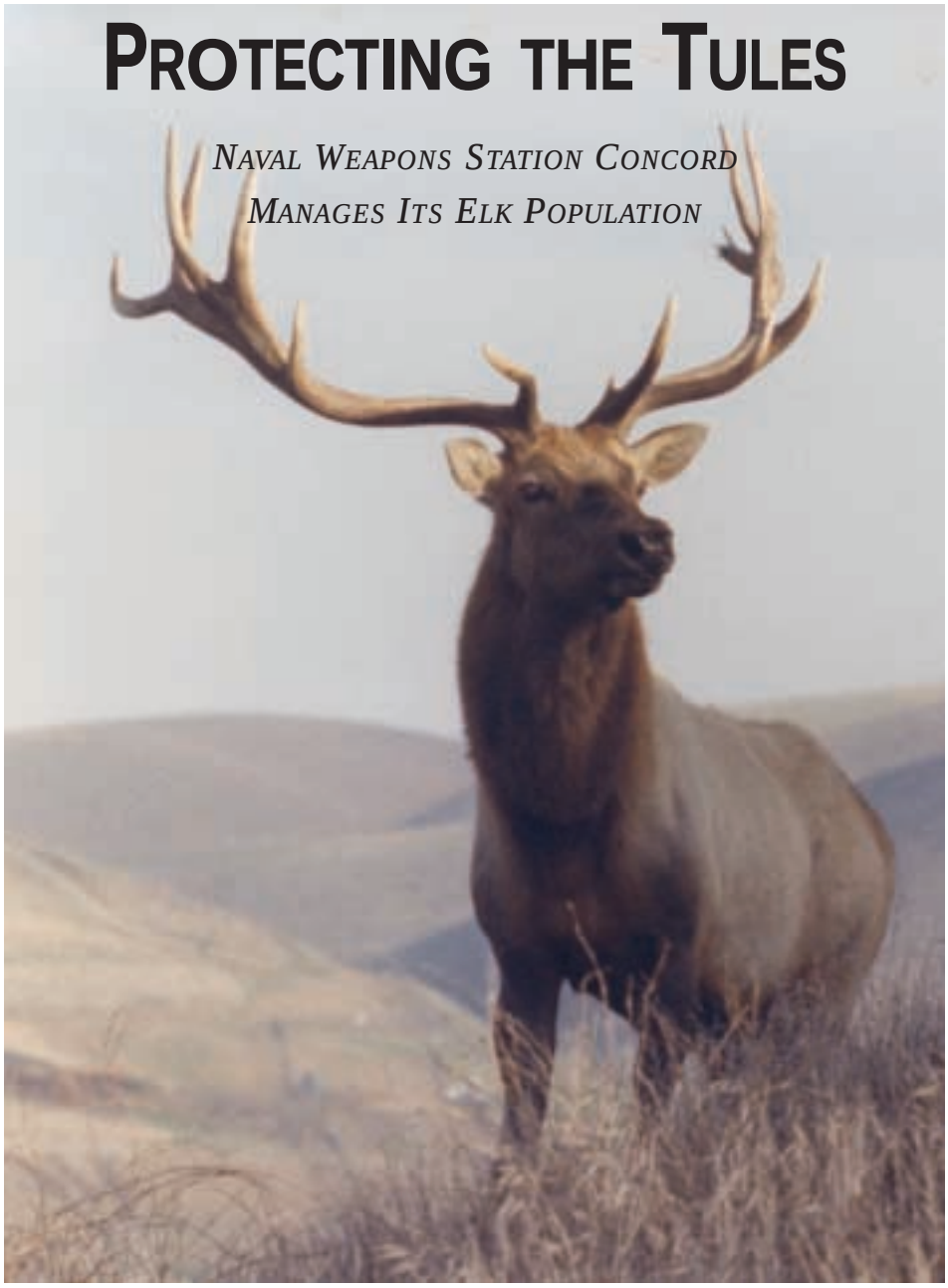
Protecting the Tules

Naval Weapons Station Concord Manages Its Elk Population



Rudy Pontemayor is a member of the elk's club.

Rather than belonging to any national fraternal organization, Pontemayor is involved in the Naval Weapons Station Seal Beach Detachment Concord's (WPNSTA Concord) elk management program.

Although Pontemayor, as the WPNSTA Concord environmental site manager, has come to enjoy the presence of the Tule elk, the herd numbered only 27 on base as of August 6, 2001.

The Tule elk (pronounced "TOO-lee"), one of six subspecies of elk in North America, is found only in California. Prior to the 19th Century, as many as 500,000 Tule elk roamed California, with as many as 2,000 in each herd. Today, there are about 2,500 elk in 19 separate areas.

As the Spanish began to settle in California in the 19th Century, they introduced a new annual flora that began to replace the Tule elk's favorite flora - perennial bunchgrasses. Also, the Spanish brought with them large, free-roaming herds of domestic stock that competed with the Tule elk for food and habitat. The 19th Century also saw the establishment of a profitable hide and tallow export market in California, which exploded—unmitigated by any wildlife protection laws. (Note: Tallow is fat extracted from animals that is used for wax, candles and other household purposes.) Then, the California gold rush of the late 1840s brought in hoards of miners who hunted the elk unchecked. Due to these factors, by 1870 the Tule elk was perilously close to extinction.

Efforts to save the Tule elk began in the 1900s. In 1977, 36 Tule elk were brought to WPNSTA Concord, through cooperation with the California Department of Fish and Game (CDFG) and the Navy Engineering Field Activity West (EFA West).

"The main goal of the Navy's program is to provide for the well-being of a moderately sized, healthy Tule elk herd, accomplished through the use of a sound, well-balanced habitat, range and wildlife management techniques," Pontemayor said. "The incorporation of new scientific knowledge and the continuance of scientific research on the Tule elk and their habitat at WPNSTA Concord will assure that the goal of maintaining a healthy, moderate-

ly sized herd will be achieved and maintained."

Prior to his work with the Tule elk, Pontemayor had no exposure to the animals although he did have some experience tending to a water buffalo herd as a youth in his native Philippines.

"Tule elk are lovable, smart and majestic animals," he said. "They are peaceful creatures, content to graze and rest under the trees when full. But, they require a great deal of patience to study, track and inventory."

After the Tule elk were brought to WPNSTA Concord, the population grew to 85 by 1989. In this year, it was determined that the carrying capacity for the range there could allow for 65 Tule elks. Thus, 30 of the elks were relocated. By 1999, the population grew to 135 and a second relocation took place.

Because relocation is so expensive and the Tule elk have a tendency to damage private fences, irrigation equipment and crops, WPNSTA, CDFG and EFA West decided to institute a non-lethal population control program.

On July 19, 2001, five female Tule elk on WPNSTA Concord were fitted with temporary contraceptive devices. A corral was set up around a site frequented by the elk and was baited with watermelon for a few days to attract the elk. Finally, with nine elks in the corral, the door was closed by remote control, and biologists and veterinarians were brought in to implant the contraceptives. The scientists also took the elks' temperature and measurements, collected blood and feces samples, and released the elk back into the herd. The contraceptives will last for two to six years. After that period of time, the contraceptives will wear off and the females will be able to breed once again.

Other projects to help the elks include the improvement of habitat by planting oak trees; periodic rescue of animals that fall into the water canal; and general oversight inspection by station personnel to ensure that the animals are in good health.

"This is a charming, innocent and peaceful creature that is native to California," Pontemayor said. "People from all walks of life, especially children, should consider this animal as a vital part of California's heritage."

"Our Tule elk management program is another example of the Navy's efforts and commitment to protect a valued natural resource," he said.

POC:

- Rudolfo Pontemayor
- Naval Weapons Station Seal Island Detachment Concord
- 925-246-5672
- DSN: 350-5672
- potnemayorrudolfo@sbeach.navy.mil

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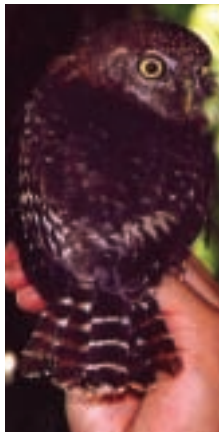
GTMO Bird Populations

Studying the Ecology of Wintering and Nesting Birds




top row (l to r)
Cuban Tody
by Kristina Ecton
Cuban Tody
by Kristina Ecton
Oriente Warbler
by Kristina Ecton
bottom row (l to r)
Cuban Pygmy-Owl by Maggie Hostetter
Cuban Pewee
by Kristina Ecton

Great Lizard Cuckoo photo by Maggie Hostetter

The Institute for Bird Populations (IBP), a non-profit research and conservation organization based in Point Reyes Station, California, has partnered with the U.S. Navy to study the ecology of birds wintering and nesting at U.S. Naval Base, Guantanamo Bay (GTMO), Cuba.

The base includes some of the last dry forest habitat and extensive mangroves in the Caribbean. Therefore, GTMO is highly important to migratory as well as year-round resident birds in Cuba.

Many species of neotropical migratory birds are known to be declining across much of North America. (Note: Neotropical migratory birds are birds that breed in the continental United States but then fly hundreds or even thousands of miles to spend their winters in the Caribbean, Central America or South America.)

Uncertainty exists about whether those declines are primarily the result of problems on the breeding grounds or problems on the wintering grounds. Initiated in 1998, this project at Guantanamo Bay is designed to help answer this critically important question.

IBP's work at Guantanamo Bay has four distinct components:

Cuban Emerald photo by Rob Emerson

1. Determining survival rates of neotropical migrant and Cuban resident species. IBP has established six bird monitoring stations in a variety of habitats on the base. For a few days each month, IBP scientists use mist nets - large, nearly invisible nets made of fine, black nylon threads - to catch birds at each station. Scientists mark each captured bird by placing a set of uniquely identifying metal or plastic bands on its legs. Sophisticated mathematical techniques allow IBP scientists to estimate survival rates for each species, based on the numbers of times they recapture or resight marked birds in successive months or years.
2. Studying the nesting biology of Cuban resident species. The base is home to nine species of landbirds that nest nowhere else in the world other than Cuba: Cuban Pygmy-Owl, Bee Hummingbird, Cuban Tody, Cuban Green Woodpecker, Cuban Vireo, Cuban Gnatcatcher, Oriente Warbler, Cuban Blackbird and Cuban Grassquit. Several of these species are true biological oddities, such as the tiny Bee Hummingbird, the smallest bird in the entire world or the Cuban Tody, a small, dazzlingly colored bird that nests in burrows it excavates in the ground. Little is known about the breeding biology of these and several other species that nest on the base. IBP is studying the nesting habits of these birds, not only to fill in some large gaps in scientific knowledge but also to better understand their habitat needs.
3. Monitoring shorebirds utilizing the Guantanamo Bay mudflats. The extensive mudflats on the Leeward Side of Guantanamo Bay teem with shorebirds during the six or so months each year that they are inundated with water. Each month, IBP surveys an area comprising about 30 percent of the mudflats. IBP has counted as many as 9,000 individual shorebirds in a single day in this restricted area alone. Since late in 1998, IBP has recorded over 40 different species foraging in the mudflats, several of them sensitive species that are considered at risk in the Caribbean and elsewhere.
4. Providing education and outreach opportunities to base residents. An important part of IBP's work at Guantanamo Bay has been to encourage base residents to learn about and value the unique, local natural resources. Over the last couple of years, IBP crews have provided periodic bird banding demonstrations to schoolchildren, written articles on local birds for the base newspaper, photographed birds for a wildlife viewing guide produced by base environmental personnel and produced a birding checklist for the base, which is being distributed to schoolchildren and others interested in local wildlife.

Cuban Green Woodpecker photo by Maggie Hostetter

The knowledge this project generates will ultimately help GTMO personnel formulate land management strategies to aid declining migratory and resident species.

Additionally, the field protocols and analytical techniques IBP is developing will provide a model for studies of overwintering neotropical migrants and resident birds throughout the Caribbean and Middle America.

Additional information about IBP can be found at http://www.birdpop.org.

POC:
- Dr. Rodney Siegel
- The Institute for Bird Populations
- 415-663-2051
- rsiegel@birdpop.org

Cuban Emerald photo by Kristina Ecton

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A Safe Haven for Wildlife

Naval Base Guantanamo Bay Provides Sanctuary for Iguana

Environmental professionals from Naval Base Guantanamo Bay (GTMO), Cuba have teamed with scientists from the San Diego zoo to bolster the Cuban iguana population on base.

When researchers from the San Diego Zoo began looking for a suitable place to study some of the most rare reptiles in the world 10 years ago, a relatively isolated military base might at first have seemed like a somewhat surprising choice.

However, Naval Base Guantanamo Bay, Cuba, like many military installations worldwide, supports vast areas of undisturbed natural habitat, and is home to an impressive abundance of wildlife and endangered species.

Today, GTMO (pronounced "GIT-mo") continues to provide invaluable support to military and Coast Guard forces in the Caribbean, and also serves to protect dry forest habitat for a variety of endangered species, many of which are now declining in other parts of Cuba.

According to Dr. Allison Alberts, an ecologist with the San Diego Zoo and lead researcher in Cuba, among the many wildlife species at GTMO, "The Cuban iguana is one of the largest, undoubtedly the most visible, and certainly the most charismatic. It seems that no one completes a tour of duty at GTMO without getting to know these prehistoric-looking giants."

Alberts added, "Unfortunately, outside the safety of the fence line, Cuban iguanas are rapidly disappearing as a result of habitat loss, hunting, and predation by introduced mammals."

Since the early 1990s, researchers from the San Diego Zoo have been working with GTMO's team of environmental professionals, and local volunteers to design conservation strategies to ensure that this unique species survives into the future.

"We are delighted and fortunate to work with fellow professionals who are dedicated to protecting wildlife that call the base home," said Patricia Loop of the base's environmental staff.

As elsewhere in the Caribbean, one of the main threats to iguanas at GTMO is a sizeable population of feral cats, which consume untold numbers of baby iguanas each year. To combat this problem, in 1993 the San Diego Zoo researchers developed an experimental head-starting program for newly hatched Cuban iguanas with funding from the National Science Foundation's Conservation and Restoration Biology Program.

"For their first 18 months of life, we raised Cuban iguana hatchlings at the San Diego Zoo until they were large enough to defend themselves. Before returning them to the wild, however, we wanted to be sure that they would be prepared for the rigors of life at GTMO," said Alberts.

Alberts explained how this was accomplished, "First, we needed to be certain that we had not produced young iguanas that were too tame and trusting for their own good. Each month, we measured the distance the head-started hatchlings would allow a human "predator" to approach before fleeing. Fortunately, the iguanas actually became more fearful over time, boding well for the day they would eventually be returned to the base."

"We also studied whether they would accept natural food sources after several months on a diet of juicy grocery store greens. When offered a choice between a native food plant and several foods they had been routinely fed at the zoo, almost all of the hatchlings were willing to try the unfamiliar food, making us optimistic that they would readily adapt to natural foods once released," she added.

After a thorough veterinary exam, the head-started hatchlings were airlifted back to the naval base. "We were

A group of GTMO residents watch as a San Diego Zoo researcher passes along information about the Cuban Iguana.
Photo by
Allison Alberts, San Diego Zoo

A mail Cuban Rock Iguana suns in the hot Caribbean sun aboard GTMO. With help from the San Diego Zoo and the Navy, the Caribbean iguanas have a greater rate of survival.
Photo by John Philips, San Diego Zoo

gratified to see that within a few minutes of release they were behaving no differently than the wild iguanas. We have continued to visit the base at regular intervals to check on their survival, growth, and health, and have been pleased to find that the head-started animals have adapted extremely well to life in the wild," noted Alberts.

Although the Cuban iguana population on the base is currently vigorous enough that further head-starting is not necessary, this valuable technique is now being applied to their highly endangered cousins in Jamaica, Puerto Rico, the Cayman Islands, and the British Virgin Islands.

"Dr. Alberts and her group of research scientists have taken great pride in this long-time project. For that, we commend them," said Loop. "We look forward to working with them on future projects designed to provide a safe haven for wildlife here at GTMO."

For more information about Cuban iguanas and other Caribbean rock iguanas, please visit the website of the World Conservation Union (IUCN) Iguana Specialist Group at http://www.scz.org/iguana.

POC:

- Bob Nelson
- Commander,
- Navy Region Southeast Environmental Public Affairs Officer
- 904-542-4032
- DSN: 942-4032
- nelsonr@cnrse.navy.mil

Navy Region Southeast Encompasses Environmental Successes

ENCOMPASS is the official environmental publication of the Navy Region Southeast Regional Environmental Coordinator for activities in the following Southeastern states and portions of the Caribbean: Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Mississippi and Tennessee. ENCOMPASS is a quarterly publication that includes a range of environmental articles in a variety of topic areas including natural resource management, pollution prevention, air/water compliance, and other local, state, and federal environmental regulatory information of interest to the Regional EnvironmentalCoordinator. There are no formal guidelines for submitting articles to ENCOMPASS. However, articles should be typed, single-spaced and include bylines and photo credits. Articles can be mailed to Commander Navy Region Southeast (CNRSE) Public Affairs Office, ENCOMPASS, Box 102, Naval Air Station, Jacksonville, FL 32212-0102.

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Charleston Receives Environmental Honors

Natural Resources Award Winner

A United States Forestry Service worker installs a new artificial cavity in a tree on Naval Weapons Station Charleston land. The cavity is being added for the Red-cockaded Woodpecker, a species protected by WPNSTA Charleston, after Hurricane Hugo destroyed much of the trees on the base.

A member of the Naval Weapons Station Charleston's Nuisance Alligator Handlers Team wrangles an American alligator on the base. The team of trained volunteers safely handles and transports an average of 20 nuisance alligators annually. The gators, which are common on the base, are sometimes found in carports, backyards and other places.

Naval Weapons Station (WPNSTA) Charleston recently received a Secretary of Defense Environmental Security Award for Natural Resources Conservation: Large Installation, FY2000.

Located in Goose Creek, South Carolina, 15 minutes north of Charleston, NWS Charleston manages more than 16,300 acres on the Cooper River. Along with its primary mission of providing management support and technical services to support the operating forces of the Navy, the Station has focused on resource management and protection as well as environmental education and outdoor recreation.

Terrence Larimer, natural resources specialist at WPNSTA Charleston, said, of the many reasons that the Navy takes pains to preserve natural resources, one of the main reasons is because, "It's the right thing to do."

Included in the WPNSTA Charleston area are 8,903 acres of managed forest, 244 acres of freshwater ponds, 564 acres of marsh and 18 miles of shoreline.

WPNSTA Charleston's primary recreational zone, the Marrington Outdoor Recreational Area, consists of over 1,000 acres of mostly undeveloped forest and marshes. Along with the rest

"It's never boring, always challenging and, most of the time, very rewarding."

of the station, Marrington offers five major picnic areas, an archery range, a six-mile jogging/skating/biking trail, a horse stable, five fishing piers, six boat ramps and a "primitive" camping area for Scouting groups. Marrington also has the "Watchable Wildlife Area," which features two observation towers, five wetland boardwalks, a one-mile interpretive nature trail and two miles of associated trails.

Hooker Lake, which is located on the Station, has a handicapped-accessible fishing pier.

There are 15 archaeological sites located on the Station, all of which are potentially eligible for the National Register of Historic Places. The area is rich in colonial and pre-Revolutionary history, including some plantations, such as the Parnassus Plantation, which were established as early as the late 1600s.

Almost two-thirds of the installation is open to the public for hunting, fishing and nature appreciation. Groups such as the Audubon Society, Scouting groups, public schools, the Berkeley County Historic Preservation Society and the South Carolina Naturalist Society can use any area on the Station with the exception of the munitions storage areas.

Program highlights over the past three years include implementation of Geographical Information Systems (GIS) technology; additions to the outdoor recreation facility; expansion of wildlife management efforts; improved community relations; maintenance of its Watchable Wildlife Area; management of the North American Waterfowl project; and implementation of a new Integrated Natural Resources Management Plan (INRMP).

The INRMP is a document used to plan, execute and manage natural resource activities over a five-year period, covering, in detail, what is going on and what will be happening in timber management, wildlife management, outdoor recreation and land management. In producing the INRMP, the station works with state authorities.

The GIS technology, which was implemented in 1998, has allowed natural resources personnel to produce maps and analyze data, as well as plan for construction, prescribed burning, tree planting, wetlands protection and other activities.

"For years, we struggled to produce maps, organize data and maintain a clear overview of our various activities," Larimer said. "We now have a much better grasp of what we are doing and where we are going."

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A Naval Weapons Station Charleston employee builds a nest box for the Wood Duck on WPNSTA Charleston lands. There are 95 nest boxes for Wood Ducks, along with 300 other boxes for non-game birds. The nest boxes are a part of WPNSTA Charleston's wildlife habitat management program.

These beautiful Wild Azaleas and other species of flora are found on Naval Weapons Station Charleston.

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Another significant part of WPNSTA Charleston's natural resources program is conservation education. From 1998 through 2000, almost 1,400 students took 29 free state-certified hunting and boating safety courses conducted by station personnel. In 1999, WPNSTA Charleston Natural Resources Specialist Terrence Larimer was named the South Carolina Hunter Educator of the Year.

WPNSTA Charleston personnel truly enjoy the natural resources work, which can find employees doing everything from installing and cleaning out nesting boxes for wood ducks, to participating in an oil spill drill, to teaching hunting and boating safety.

"It's never boring, always challenging and, most of the time, very rewarding," Larimer said.

"Conserving our natural resources, and protecting our pristine environment and the beauty of the South Carolina low country is very important to us," said CAPT William E. Cook, Jr., WPNSTA Charleston commanding officer. "We've always felt we have the best program in the Department of Defense and this award confirms that. Obviously, we're very pleased."

Awards already earned by WPNSTA Charleston include the Chief of Naval Operations Community Service Award for Environmental Stewardship; Tree City USA designation for six consecutive years; two certificates of Environmental Achievement by the National Awards Council for Environmental Sustainability; and a Special Recognition Award from the South Carolina Department of Natural Resources.

"Quality of life is vital to the Navy, and providing outdoor recreational opportunities is an important aspect of that," said Clifford Townsend, natural resources manager with WPNSTA Charleston. "We want people to be able to come out and enjoy the outdoors, and we are putting considerable time and effort into making good facilities and quality opportunities available."

POC:

- Bob Tobias
- Naval Weapons Station Charleston
- 843-764-4094, x-233
- DSN: 794-4094, x-233
- tobias_bob@nwschs.navy.mil

The Great Egret, pictured here, is but one of a wide variety of wildlife species found on Naval Weapons Station Charleston.

You Can't Win If You Don't Enter

You can't win if you don't enter. Though it's a cliché, it's true. It's time to think about your command's participation in the Chief of Naval Operations (CNO), Secretary of the Navy (SECNAV), and Department of Defense (DoD) environmental awards competitions for fiscal year 2001. The competitions recognize individuals, teams, ships and installations for their exceptional environmental stewardship.

The official call for nominations for the CNO awards was circulated in August, giving Navy activities and personnel an opportunity to better prepare and avoid the last-minute rush. For complete details, look for the competition criteria on the N45 website at www.enviro.navy.mil/N45.

Format, which is based on DoD requirements, is critical. If the format for writing the nomination and identifying point-of-contact information is not followed, the nomination will be rejected at the CNO level prior to consideration by the judges.

Major claimants will forward nominations to CNO/N45 by the 4 January, 2002 deadline. CNO winners will be forwarded to the SECNAV competition, and winners at that level will be forwarded to DoD.

CNO and SECNAV winners will gather at the U.S. Navy Memorial on 30 April, 2002 to be recognized for their accomplishments and be presented with their awards. The DoD awards ceremony will be held 1 May, 2002 at the Pentagon.

The DoD awards honor installations, teams and individuals for outstanding work in DoD environmental programs within six categories. They include Natural Resources Conservation, Cultural Resources Management, Environmental Quality, Pollution Prevention, Environmental Excellence in Weapon System Acquisition, and Environmental Restoration.

There is a two-year cycle for the DoD awards. Nine awards will be given in fiscal year 2001. The categories are Natural Resources Conservation (Small Installation and Individual/Team), Cultural Resources Management (Installation), Environmental Quality (Non-industrial Installation and Individual/Team), Pollution Prevention (Industrial Installation), Environmental Restoration (Installation and Individual/Team), and Environmental Excellence in Weapon System Acquisition (Team).

POC:

- Easter Thompson
- Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division (OPNAV N45)
- 703-604-5426
- DSN: 664-5426
- thompson.easter@hq.navy.mil

Navy PRIME: Pollution Prevention at its Best

The Navy's Plastic Removal In Marine Environment (PRIME) Program is still active in reducing the amount of plastic waste generated aboard surface ships.

Starting in 1999, it became illegal for Navy surface ships to discharge plastics overboard anywhere in the world. (Because of their special challenges, submarines have until 2009 to eliminate plastic discharges.) Although many Navy ships have plastic waste processing equipment to handle plastic trash, it remains a laborious, messy task to segregate and store this material for land disposal. The PRIME program can help sailors cope with the management of their plastic waste. This is an especially difficult task since the properties that make plastics waste persistent in the marine environment are the very same properties that protect shipboard food from spoilage and keep essential items clean and dry in the harsh wet environment that ships operate in. The Naval supply community has introduced many new non-plastic alternative items and the PRIME Program is developing new products in the fight to reduce plastic waste. PRIME Program personnel focus on items that relieve sailors' biggest plastic waste headaches and welcome suggestions you may have.

POC:

- Vickie Edgar
- PRIME Program Manager Navy Inventory Control Point
- 717-605-5623
- DSN: 430-5623
- vickie_m_edgar@icpmech.navy.mil

Navy Environmental News
Currents
Pollution Prevention & Compliance

Combating the Spread of Invasive Species

Assessing the Status of Navy Programs

The Problem

Invasive species are defined as any non-native plant, animal or insect whose introduction is likely to cause harm to the economy, environment, or human health. Examples of well-known invaders into the United States include kudzu, often described as "the vine that ate the South," and the gypsy moth, an insect that is defoliating trees in the northeast. Invasive species cause millions of dollars of damage to our natural and managed lands and can be detrimental to agricultural operations. Once established, these invaders compete for limited resources and often displace or eliminate native plants and animals. Ecological damage by invasive species is the second leading cause of habitat loss, which ultimately leads to species extinction. (See other articles about invasive species in this issue of Currents magazine including California Pepper Trees and Raptors and Weeding Out Desert Aliens.) Predation is another cause for extinction. In Guam, for example, the non-native brown tree snake, which feeds on birds, has caused the extinction of many of Guam's bird species. Unfortunately, the recent increase in global commerce and the growth of the international shipping industry has only magnified the problem because ships serve as unwitting carriers of plants and animals, transporting them from one ecosystem to another.

A Solution

To address the growing environmental and economic damage caused by these invaders, Executive Order (EO) 13112, "Invasive Species," was issued on February 3, 1999, requiring Federal agencies to prevent the introduction and spread of these species. Under EO 13112, Federal agencies whose actions may impact the status of invasive species are required to identify those actions and not authorize, fund, or carry out actions likely to cause the introduction or spread of these species. It also established the National Invasive Species Council (NISC) to oversee implementation and prepare a National Invasive Species Management Plan that evaluates agency programs and issues recommendations. The Secretary of Defense is a member of the NISC.

NISC published the National Invasive Species Management Plan on January 18, 2001. The plan reviews current management programs and details measures of success for Federal agency efforts to combat invasive species.

The Navy's Role

As part of the data-gathering effort to assist NISC in preparing the Plan, the Navy conducted a comprehensive survey of Naval Facilities Engineering Command (NAVFAC) regional components and major claimants to assess the status of invasive species management programs in the Navy and identify funding and research needs.

Navy regulations, instruction, and directives for invasive species prevention and management provided a basis for the assessment. Existing Navy programs that directly or peripherally prevent the introduction and spread of invasives include:

- Ballast Water Management,
- Transportation Policy and Procedures,
- Pest Management and Quarantine Regulations,
- Integrated Pest Management, and
- Natural Resources Management.

The USS Rodney M. Davis operating in the South Pacific.

The Brown Tree Snake threatens many of the rare bird species native to Guam.
Photo Credit – U.S. Fish and Wildlife Service

Ballast Water Management

Did you know that ballast water transfer between ports during international commercial shipping operations is the largest source of aquatic invasive species? One of the most notorious aquatic invaders in the U.S. is the zebra mussel. The zebra mussel was introduced to North America in 1980s by traveling in the ballast water of freighters. The mussels were ultimately discharged into the Great Lakes and have since spread throughout the Lakes and into the Mississippi Basin, damaging industrial and municipal water delivery operations and displacing native mussels. Even though the contribution of Armed Forces' vessels to total ballast water discharged in the U.S. is small compared to commercial vessels, the Navy implemented strict standards to prevent non-indigenous aquatic species from being introduced via ship ballast water, anchors and chains, chain lockers, and mud or sediment on amphibious vehicles. Before entering a port, Navy ships pump out ballast water when they are at least twelve nautical miles from shore and twice fill the tanks with clean seawater prior to port entry. Records are maintained for these ballast water operations. Moreover, anchors, chains, and appendages of ships are washed down after completion of operations and before entering port. These steps effectively prevent Navy ships from accidentally introducing aquatic invaders.

Transportation Policy and Procedures

Invasive species can also proliferate by hitchhiking on vehicles, allowing them to spread over long distances. Navy transportation policy and procedures call for the routine maintenance and washing of vehicles after field operations. Although the removal of mud and particulate matter from equipment and vehicles primarily serves to expend the life of the vehicle, these procedures also prevent the introduction and spreading of invasive species from one worksite to another.

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Kudzu (Pueraria lobata) is a highly invasive vine affecting many Navy installations located in the mid-Atlantic and southeastern U.S.

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Pest Management and Quarantine Regulations

Invasive species occasionally are accidental stowaways in aircraft cargo. The Navy employs a variety of pest management techniques aboard aircraft and on ships to intercept harmful species. Cargo and passengers are inspected before loading and again upon loading from foreign ports. Pest surveillance is also conducted on or around airfields, particularly those receiving aircraft from abroad or regions in which invasive species of concern originate. The Navy also complies with domestic and foreign quarantine regulations. The U.S. Department of Agriculture (USDA) quarantine regulations control the importation of plants, animals, soils, insects, and infectious agents. The USDA Animal and Plant Health Inspection Service (APHIS) monitors international airports, seaports, and border stations for the presence of pests or disease organisms and conducts inspections of ship cargoes, aircraft, rail, and truck freight, and mail from other countries. APHIS has also established training programs to certify military personnel to conduct quarantine inspections and certify cargo and retrograde equipment as "pest-free."

Integrated Pest Management

Invasive species control is an integral component of the Navy's natural resources management programs. Non-native plants and animals can quickly infest large areas to the point where they can interfere with Naval operations ashore. For example, non-native plants have grown over equipment and antennae and have diminished land use for agricultural or grazing outleases. Therefore, each installation is required to prepare and implement a Pest Management Plan describing all installation pest management requirements, resources, and procedures. Integrated Pest Management (IPM) is the basis of pest control on Navy installations. IPM promotes non-chemical controls and minimizes the use of pesticides to increase long-term sustainability of ecosystems. Under some circumstances, pesticide application can be an effective management tool, but environmental and human health concerns limit their use.

Natural Resources Management

Restoration of native biodiversity is also an important component of natural resources management. Since invasive plants alter the composition of species in an ecosystem, natural resources managers use native plants in landscaping activities to restore native biodiversity on installations. In 1995, the Department of Defense (DoD) joined with the Nature Conservancy and Keystone Center to discuss the importance of biodiversity management on military lands and how to integrate it successfully with mission requirements. The dialogue resulted in the publication of "A DoD Commander's Guide to Biodiversity," a brochure summarizing the importance of biodiversity conservation and its compatibility with military mission requirements. A more detailed publication "A Handbook for Natural Resources Managers: Conserving Biodiversity on Military Lands" was also produced. This Handbook provides guidance and strategies for DoD natural resources managers for implementing conservation and ecosystem management programs. This handbook is available via the Defense Environmental Network & Information eXchange (DENIX) at www.denix.osd.mil.

Cooperative Programs

Ecosystem management is most successful when implemented at a regional level. DoD participates in several regional and interagency initiatives to promote native biodiversity and control invasive plants. DoD activities under such initiatives are funded by the Legacy Program, which was established to fund, promote, and expand stewardship, conservation projects, and partnerships to protect natural and cultural resources on DoD lands. Regional projects for the control of invasive species in the southwestern U.S. and on the island of Maui have been extremely successful in bringing together Federal and non-Federal partners to work for the benefit of DoD lands and the surrounding ecosystem.

In addition to these partnerships, Navy natural resources managers can also take advantage of volunteer programs to assist in the removal of invasive species. The Student Conservation Association (SCA), funded by NAVFAC, places student volunteers at many installations to assist with the more labor-intensive aspects of invasive plant control such as hand removal.

Research and Funding Needs

Despite these ongoing programs for combating invasive species, the assessment identified several areas that require funding for more study: creation of State and DoD partnerships for the biological control of invasive plants, improved quarantine and washdown procedures, safe yet effective fumigants and physical control methods, and species-specific control mechanisms.

Summary

The NAVFAC assessment indicates that although invasive species prevention generally falls under the purview of pest management and natural resources personnel, installation operators also have an important role to play because the prevention and eradication of invasive species is not only environmentally sound, but enhances mission readiness. Moreover, the restoration of native species provides environmental benefits to the ecosystem on a regional level. Navy facilities have successfully begun to address this problem; however, more effort is needed to ensure that Navy operations - both ashore and afloat - have the necessary tools to effectively combat the problems associated with invasive species.

To obtain a copy of the Navy invasive species assessment send your request to Ms. Lorri Schwartz, NAVFACENGCOM (Code ENN), 1322 Patterson Avenue SE, Suite 1000, Washington Navy Yard (WNY), Washington, DC 20374 or send a request to the email address listed below.

POC:

- Lorri Schwartz
- Naval Facilities Engineering Command
- 202-685-9332
- DSN: 325-9332
- SchwartzLA@navfac.navy.mil

Scot's broom (Cytius scoparius) is an invasive plant that hinders activities at Naval Radio Station Jim Creek. When Scot's broom grows taller than seven feet in height, the plant degrades the transmission of radio signals from the antennae.

Navy Environmental News
Currents
Pollution Prevention & Compliance

A Plan to Protect Coral Reefs

DoD Document Outlines Efforts to Conserve Sensitive Environments

The Problem

Coral reefs are the world's most biologically diverse marine ecosystems. Reefs consist of a vast assemblage of plants, animals, and microbes, many of which are still scientifically unknown. Reef ecosystems provide habitat and food for fish, materials for new medicines, revenue from tourism and recreation, and protection from coastal storms. However, results of monitoring and assessment programs conducted over the past ten years show that corals are deteriorating at an alarming rate. Human activities such as coastal development, destructive fishing practices, pollution and sedimentation are the leading causes of coral reef degradation worldwide.

A Solution

In response to growing concern about the loss of corals, Executive Order (EO) 13089 was issued on June 11, 1998 directing Federal agencies to study, restore, and conserve U.S. coral reefs. EO 13089 also established the U.S. Coral Reef Task Force (CRTF) for the purpose of coordinating Federal agency coral reef protection efforts. The Task Force is co-chaired by the Secretaries of the Departments of Interior and Commerce, and is comprised of Federal agencies with environmental protection responsibilities. The Department of Defense (DoD) is a member of the Task Force and is represented by the Assistant Secretary of the Navy (for Installations and the Environment) (ASN(I&E)). The Task Force oversees implementation of the responsibilities and policies outlined in the EO, guides and supports coral reef initiatives, and works in cooperation with other agencies and stakeholders to conserve coral reefs. The Task Force is also responsible for coordinating a comprehensive program to map and monitor U.S. coral reefs, developing and implementing research and mitigation efforts, and assessing the U.S. role in international protection of coral reefs.

To facilitate oversight of EO implementation, the Task Force required each Federal agency to prepare a Coral Reef Protection Plan describing how it will identify and prevent impacts to coral reefs. ASN (I&E), with assistance from the Naval Facilities

Engineering Command (NAVFACENGCOM) (Code ENN) and the other military services, prepared the DoD Coral Reef Protection Implementation Plan for submission to the Task Force on October 15, 2000. This Plan is available via the Defense Environmental Network & Information eXchange (DENIX) at www.denix.osd.mil.

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Responsible land management is an essential aspect of coral reef protection.

Surgeonfish schooling on a reef, Johnston Atoll (Line Islands, Central Pacific - an island possession of the United States).

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The DoD Coral Reef Protection Implementation Plan

The Plan contains a comprehensive overview of Army, Navy, Air Force and Marine Corps policies and programs related to coral reef protection, describes military activities potentially affecting coral reef ecosystems and lists funding sources for conservation activities. The plan also discusses DoD research, outreach and stewardship initiatives both planned and in progress that are designed to protect and enhance coral reef ecosystems.
The Plan is not only a useful source of environmental information and requirements for military personnel, but also an excellent communications vehicle for other Federal agencies and the public.

Environmental Planning

DoD uses a variety of programs to identify and avoid impacts to coral reefs; however, the most important of these is environmental planning. The Navy evaluates major operations and training exercises conducted domestically for potential environmental impacts under the National Environmental Policy Act (NEPA) and Coastal Zone Management Act (CZMA). Although EO 13089 applies only to U.S. coral reef ecosystems, actions conducted internationally are still reviewed under EO 12114, Environmental Effects Abroad of Major Federal Actions. During these evaluations, potential impacts to the marine environment by operations and training exercises are identified. Environmental plans for training and combat exercises provide for the proper management of ship and vehicular operations to avoid damage to coastlines, coral reefs, and beaches. DoD also uses ecological surveys prior to conducting training exercises to select landing corridors and maneuvering techniques in areas where these activities can adversely impact coral reef ecosystems. The Navy is also developing a marine-based Geographic Information System (GIS) system that will contain coral reef monitoring data, reef locations, habitat conditions, and related marine fisheries information.

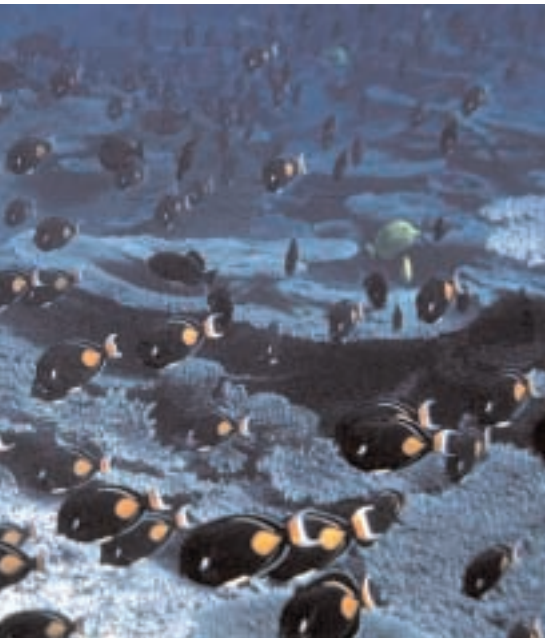
Natural Resources Management

Military installations located in proximity to coral reef ecosystems include ecological information on reefs and conservation measures, as appropriate, in installation's integrated natural resources management plan (INRMP). An INRMP is a comprehensive document that provides for the sustainable use of natural resources and conservation of endangered or sensitive species and ecosystems. The purpose of an INRMP is to successfully balance the management of ecosystem resources with the specific mission requirements of the installation that may potentially impact natural resources. INRMPs are also comprehensive sources of biological and geographic information and primary sources of information for preparing environmental assessments and impact statements.

Pollution Prevention and Cleanup

The DoD Coral Reef Protection Implementation Plan also discusses compliance programs afloat that are used to protect coral reefs, such as pollution prevention (P2) standards. P2 procedures and shipboard equipment have significantly reduced the amount of pollutants and waste products used on military vessels. In accordance with the Act to Prevent Pollution from Ships (APPS), DoD complies with strict shipboard pollution prevention standards. DoD continues to develop innovative technology such as "compressed melt units", which compress all plastic waste for storage on board. This technology has allowed DoD to implement a zero plastics discharge policy. Now, all plastic waste is processed by the compressed melt units and brought back to shore for disposal or recycling. Biodegradable materials such as cardboard are processed by on-board pulpers into a non-floating slurry that is non-toxic to marine organisms and authorized for overboard discharge.

In addition to protecting the marine environment during normal operations, DoD also assists with cleaning up



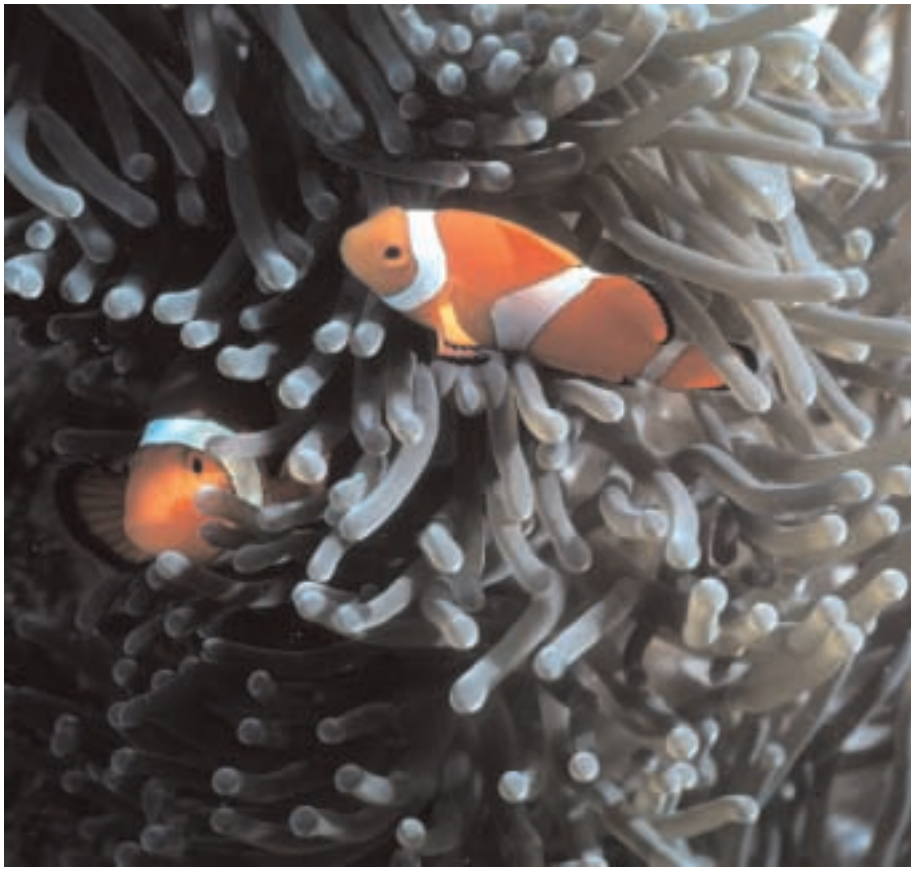
disasters at sea, such as catastrophic oil spills. Oil spills are disastrous for marine wildlife and can be detrimental to corals. The Navy possesses one of the world's largest inventories of oil pollution response equipment with response capability available from a worldwide network of installations. In fact, Navy fleet skimmers collected half of the oil recovered from the Exxon Valdez spill in Alaska. DoD also has well-established compliance programs on the installation level to prevent accidental oil spills and to provide a rapid response and clean-up action in the event of a spill.

Invasive Species

Many people are not aware of the extent to which the introduction of non-indigenous species can damage both terrestrial and aquatic ecosystems. Some non-indigenous species upset the natural balance of marine ecosystems and often compete with or displace corals and reef fish communities. Ballast water transfer is a potential vector by which these species are introduced to non-native environments. Such operations by the commercial shipping industry account for the largest source of aquatic invasive species worldwide. To prevent such accidental introductions from military vessels, DoD implemented a "double exchange" policy. This policy requires that all tanks containing ballast water taken on within 3 nautical miles (nm) of shore or in polluted areas be purged twice with clean seawater while the ship is farther than 12 nm from shore. (See other articles about invasive species in this issue of Currents magazine including Combating the Spread of Invasive Species and Weeding Out Desert Aliens.)

Land Management

Activities conducted ashore such as agricultural operations and dredging can also impact the health of coral reef ecosystems if responsible land management practices are not used. Runoff from landscaping and farmland generally contains levels of pesticides, herbicides and fertilizers and over time can degrade the health of nearby coastal waters. To prevent the introduction of harmful substances into the marine environment, military installations use best management practices (BMPs) to control non-point source pollution. DoD also minimizes sedimentation by implementing erosion control measures and taking reparative steps when appropriate.



Clownfish with their host anemone.

Research, Outreach and Stewardship Initiatives

Most are probably not aware of the many impressive and interesting research, outreach, and stewardship initiatives that are planned or actively underway to increase our understanding of coral reefs and to further conservation activities. Navy divers are currently assisting researchers in mapping coral reefs located near DoD installations and operational areas and are gathering biological information to assess the health of these reefs. The Navy is also developing BMPs for military vessels that regularly operate near coral reefs and a training program to implement necessary management efforts.

In addition to producing the Plan, DoD developed the Coral Reef Conservation Guide, a general outreach brochure to heighten awareness within DoD. The

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Guide provides basic information on coral reef ecosystems and discusses why their protection is important. It also gives an overview of DoD activities that may potentially impact coral reef ecosystems and outlines pertinent DoD and U.S. national laws and policies regarding coral reef protection.

In addition to reading these documents, you can learn more about coral reef protection in the DoD Natural Resources Compliance Course, an Inter-Service Environmental Education Review Board approved course, which is offered through Navy's Civil Engineer Corps Officers School (CECOS). This course is offered periodically to provide training opportunities for natural resource managers and other DoD personnel. (Our article "CECOS Announces Natural Resources Classes" provides additional details on the DoD Natural Resources Compliance Course.)

SUMMARY

Federal laws and regulations, EOs, and internal policies and procedures have guided DoD efforts to protect coral reefs. But DoD's commitment to these valuable resources exceeds that of its regulatory responsibilities. Coral reefs provide numerous benefits to the American people and it is DoD's mission to be good stewards of the lands and waters in which it operates. As evidence of this commitment, DoD will continue to be an active member of the Coral Reef Task Force and work in cooperation with Federal partners to research, restore, and protect coral reefs.

The DoD Coral Reef Protection Implementation Plan is available for download via the Defense Environmental Network Information Exchange (DENIX) at: www.denix.osd.mil.

POCs:

- Thomas Egeland
- OASN(I&E)
- 703-588-6671
- DSN: 425-6671
- Egeland.Tom@hq.navy.mil

- Lorri Schwartz
- Naval Facilities Engineering Command
- 202-685-9332
- DSN: 325-9332
- SchwartzLA@navfac.navy.mil

- Mindy Richlen
- ADI Technology Corporation
- 703-933-8281
- Mindy.Richlen@aditech.com

This submerged tank provides habitat for many reef fish and plants and, over time, effectively serves as an artificial reef for many marine species.

The Navy's Natural Resources Programs

Integrated Plans Can Help to Maintain Readiness and Protect Valuable Resources

Most people are not aware of the size and scope of the Navy's Natural Resources Management (NRM) program. Navy lands cover two million acres on over 150 installations. These lands are home to 164 currently listed endangered species and 253 candidate species. The Navy employs over 130 full-time natural resource specialists, whose job it is to manage Navy lands, waters, forests, fish and wildlife, and outdoor recreation resources, comply with resource protection laws, and conserve natural resources in the United States and its territories and possessions.

Installation Commanders must appoint an installation Natural Resources Manager whose duties include ensuring that the Commanding Officer is informed regarding natural resources issues. Their collective challenge is to manage Navy lands and natural resources effectively and in compliance with environmental laws, while ensuring that our naval forces can use these lands to train and maintain readiness and military capability.

The NRM program must enable Navy compliance with more than 20 U.S. laws that control the management of natural resources on Navy lands and regulate the Navy's operations with respect to natural resources. Particularly important today are the Conservation Programs on Military Reservations (Sikes Act), Endangered Species Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, and National Environmental Policy Act.

NRM is primarily an installation-level activity that is guided by an Integrated Natural Resources Management Plan (INRMP). Each installation having land and water suitable for the conservation and management of natural resources (about 120 sites) must prepare and implement a comprehensive INRMP. And it must be prepared in cooperation with the U.S. Fish and Wildlife Service and the appropriate State agency. Consistent with military operations on the installation, each INRMP provides for fish and wildlife management, land management, forest management, fish and wildlife oriented recreation, fish and wildlife habitat enhancement, wetland protection and public use of natural resources.

One can begin to appreciate the scope of the Navy's NRM program by considering that the land management section of an INRMP must address issues such as ecosystem management, wetlands and watersheds, estuaries, soil and water conservation, biodiversity, grounds maintenance, nonpoint-source pollution control, landscaping, agricultural uses and potential, fire management, insect and disease management, rangeland conditions and trends, management for multiple use, and critical or unique coastal barrier systems, coral reef systems, critical habitats and other areas of special interest. Relative to forest management, the plans address current forest inventories, conditions, trends, and potential uses; silvaculture goals; maintenance of forested areas and access roads; forest and stand improvement methods; harvesting and reforestation methods and schedules; and protection and enhancement of other natural resources.

Balancing the often competing demands of natural resource protection and military training is a huge task, but one that the Navy is aggressively pursuing. Many of the pages in this issue of Currents contain stories about the dedicated Navy natural resources professionals meeting the challenge of combining environmental stewardship with readiness.

POC:

- Joe Cook
- Natural Resources Program Manager
- Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division
- 703-602-5335
- DSN: 664-5335
- Cook.Joe@hq.navy.mil

Navy Environmental News
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The N45 Outlook

Supporting Navy Readiness

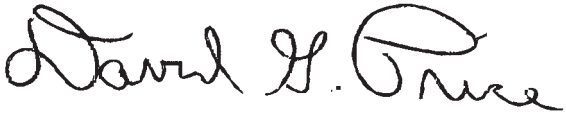
I want to return to a theme that I have touched on before in this space - how the Navy Environmental Quality (EQ) Program supports Navy readiness. I want to reemphasize the importance of being able to identify how the EQ Program (pollution prevention (P2) and environmental compliance) supports readiness and suggest some ways we can improve that support.

Rear Admiral Nolan recently relieved Rear Admiral Baucom as the Director, Environmental Protection, Safety and Occupational Health (N45). In my first opportunity to brief RDML Nolan, I told him that one of my challenges was to effectively communicate the importance of the EQ Program. Usually, it is not an EQ issue that is threatening a planned training exercise or preventing the relocation of aircraft. We don't get a lot of "airtime" at the Chief of Naval Operations (CNO) N45 morning meetings. But if we do not have a strong, effective EQ program, the ability of our shore facilities to provide crucial logistics support to the Fleet will degrade. RDML Nolan's response was that EQ Program personnel throughout the Navy were a lot like those who worked on the Y2K issue. If you do your job well, nothing goes wrong and no one notices.

I think that there is a lot of truth in RDML Nolan's comment, but I also think that there is more we can do more than just maintain our current capabilities. When we talk about how EQ supports readiness, we always focus on sustained compliance while minimizing life cycle costs. That is the primary goal of the Environmental Quality Initiative (EQI). Using P2 to achieve compliance reduces the amount of regulated actions on our activities, thus reducing our vulnerability to future regulatory non-compliance. P2 in most case will also reduce the life cycle cost of complying. Although sustained compliance and reduced life cycle cost are the key drivers in the Navy EQI, the Initiative stresses trying to identify and eliminate areas that have the potential to cause future violations – our areas of environmental vulnerability.

There is, I believe, another key area where the EQ Program can have a significant impact on readiness - by increasing the Navy's flexibility to utilize our existing shore assets. As the Navy continues to investigate the most efficient and effective means to provide maintenance and repair capabilities and other shore infrastructure support, maximum emission levels and permit limits have to be taken into account. By reducing or eliminating emissions from current operations, we increase our ability to absorb new operations into our existing infrastructure. An obvious example is the impact of the Clean Air Act (CAA) conformity regulations. The ability of a Navy activity in a CAA non-attainment area to accommodate new or increased mission requirements can be directly impacted by its ability to offset any potential emission increase with reductions in emissions from current operations.

The Navy EQ community is doing a great job to support sustained compliance and reduce life cycle costs. It is essential that we continue to do so. But there are also significant opportunities for the EQ Program to be more proactive. By reducing environmental vulnerabilities as we address compliance requirements, we can make future compliance easier and less costly. By increasing the Navy's flexibility to best use its available shore infrastructure assets, we can increase our direct support to Navy Readiness. It is certainly not easy to get funding for proactive initiatives in times of tight budgets. Our challenge is to effectively demonstrate to our senior leadership the direct benefits to the Fleet. It won't be easy, but I really believe that the payoff is worth the effort.



Reaching the Fleet

NAVAIR Continues Dialogue With Sailors and Marines On Environmental Issues

The Naval Air Systems Command's (NAVAIR) sponsored another successful dialogue with sailors and marines regarding their environmental challenges at the third annual Environmental Information Exchange (EIE) held in San Diego California in June of this year.

The Lead Maintenance Technology Center for the Environment Working Integrated Product Team (LMTCE WIPT) realized that up-close and personal interaction with the actual fleet maintenance community is essential to identify the needs and concerns of our sailors and marines and report out on progress being made towards issue resolution. Thus was born the EIE - an annual workshop that provides a structured but relaxed venue for free information flow among the participants. The ultimate goal of the EIE is to better understand the environmental challenges facing the fleet, and translate that information to acquisition managers to affect and or influence future design decisions, maintenance processes, or operational use.

NAVAIR recently hosted the third EIE at the Naval Amphibious Base Coronado in California. Forty-six people representing the Navy, Marine Corps and Air Force attended the three-day conference, co-hosted by Commander, Naval Air Force, U. S. Pacific Fleet San Diego.

Working with the LMTCE WIPT subject-matter experts, the group identified 73 aviation-related concerns, mainly in the areas of cleaning operations, parts washers and their detergents, corrosion control, technical manuals, painting/stripping operations, and authorized use lists (AULs). Each of the concerns has been assigned the appropriate action proponent and will be documented in the NAVAIR environmental technology needs database to investigate qualified solutions.

The previous two EIEs collected 63 technology needs, all of which have been addressed and are currently being resolved. The LMTCE WIPT members respond personally to the individuals presenting the need with status updates, and this has helped strengthen NAVAIR's credibility with the Fleet.

If you are curious about the Fleet's concerns, the LMTCE WIPT has developed two fact sheets that document the action items from the 1999 and 2000 EIEs. Hardcopies of the EIE fact sheets can be obtained by calling Gary Whitfield at 904-542-0516, x-124. Fact sheets are also available on a range of LMTCE WIPT environmental products and services including the Environmental Systems Allocation (ESA) Program, Applicator Pens for No-Rinse Chromate Conversion Coatings, the NAVAIR Environmental Compliance Calendar, Selecting the Right Abrasive Blast Media, and the NAVAIR Regulatory Impact Summary Consolidation (RISC) Initiative. Visit the NAVAIR Environmental Web Site at http://www.enviro-navair.navy.mil to view and download these fact sheets and other products and services developed by the LMTCE WIPT.

POCs:

- Herman Varmall
- Deputy Program Manager, AIR-8.7
- 301-757-2137
- DSN: 757-2137
- VarmallHA@navair.navy.mil

- Lynn Cahoon
- NADEP Cherry Point
- 252-464-8141
- DSN: 451-8141
- CahoonAL@navair.navy.mil

Comments About the 2001 Exchange

"It's good to know which environmental issues are coming down the pike so that we can plan for them."

"This conference was very well organized and promoted open conversation."

"The quality of the information and points of contact were far better than I had expected."

Navy Environmental News Currents

TTIPS

TECHNOLOGY TRANSFER AND IMPLEMENTATION PROGRAM SUMMARY

AFFF RISES FROM THE ASH

AIR SPARGING HYDROCYCLONE (ASH) SHOWS PROMISE

By combining coagulation, hydrocyclone and air flotation principles into one operation, the Air Sparging Hydrocyclone (ASH) has emerged as one of the most promising technologies for treating wastewater from Aqueous Film Forming Foam (AFFF).

The Navy uses Aqueous Film Forming Foam (AFFF) to suppress combustible and flammable liquid fuel fires resulting from aviation and shipboard accidents and battle-induced damage. In addition, the Navy specifies that shore-side hangars use AFFF in their sprinkler and deluge systems.

Despite its wide and effective application, long-term continued use of AFFF poses an environmental concern, raising questions to its resistance to biodegradation, toxicity from the constituent butyl carbitol, and capability for extreme foaming. Subsequently, for the past several years the Navy and Air Force have developed and identified technologies that can effectively treat AFFF wastewater, as well as, other wastewater streams containing high bio-chemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), and fuel-oil-grease (FOG) within what is considered acceptable cost and time requirements. These contaminants can pose a nuisance to industrial wastewater treatment plants (IWTP) by disrupting plant operations or by causing pollutant discharges in excess of the permitted limits.

Manufacturers are developing biodegradable replacement formulations for AFFF that will provide the same fire-controlling foam characteristics. Some of the initial results are promising, and these replacements will probably come to the market in the five years. For now, the only reliable method to remove AFFF (in its existing formulation) from wastewater is a combination of existing and/or emerging technologies.

Mobile ASH Unit Demonstrated at Naval Station Mayport, Florida

Conventional wastewater pre-treatment processes are either ineffective or too costly to treat the emulsified oils generated by the use of soaps, detergents, and AFFF releases. Gravity oil/water (O/W) separators are not capable of separating the chemically stabilized O/W emulsions that exit from aircraft and vehicle wash racks. Other pre-treatment unit operations such as thermal treatment, chemical demulsification, depth filtration, and combinations thereof, are capital intensive and usually have high operation and maintenance costs. One economical method to remove AFFF is a physical removal and concentration process, followed either by direct disposal or additional treatment such as reverse osmosis (RO). The processed wastewater can then be discharged and the concentrate, depending upon the volume, can either be directly disposed of or treated again with another technology prior to disposal.

Of all the physical removal methods, one of the most promising is Air Sparged Hydrocyclone (ASH) technology. By combining chemical coagulation, hydrocyclone, and air flotation principles into one unit operation, an ASH unit can provide adequate pre-treatment, and often final treatment of the waste-streams. In the ASH system, the AFFF-containing wastewater is introduced tangentially into its cylindrical chamber (3 inches in diameter by 18 inches in length) producing a tangential swirl. Concurrently, compressed air is introduced through ultra-fine pores in a surrounding tube, contacting the swirling wastewater. The shear creates extremely fine bubbles, resulting in air-AFFF particle collision and the subsequent development of a froth containing high concentrations of AFFF. The processed water, reduced in AFFF concentration,

If you would like to share your P2 success stories, or would like further information on the Navy's technology transfer program, contact Kurt Buehler, NFESC, DSN: 551-4886, 805-982-4886, e-mail BuehlerKD@nfesc.navy.mil

is discharged from the bottom of the ASH unit into another tank for further treatment or discharge. The concentrated foam flows out of the top of the ASH unit. This process is repeatable by one or several additional ASH units configured in series.

The advantages of implementing the ASH system are:

- Higher AFFF removal rates compared to standard dissolved air floatation (DAF) systems,
- Greater surface loadings, between three to ten times that of standard DAF systems,
- Reduced hydraulic retention times, as low as seven percent of standard DAF systems,
- Reduced sludge volumes of between 33 – 50 percent produced by standard DAF systems,
- Smaller footprint from that of standard DAF systems, and
- The ability to handle varying loads.

The ASH system has been successfully demonstrated and tested at Naval Station Mayport, Tinker Air Force Base and other DoD facilities. ASH is a portable batch process that removes the pollutants to the desired concentration level. The pollutants are concentrated and separated from the wastewater. A four-staged ASH system can remove over 95 percent of pollutants.

The capital equipment cost required for the design and manufacturing of a trailer-mounted, four-stage ASH system (with recycling capability to allow infinite number of processing stages in a batch mode) is approximately $200,000. This design is based on a processing capacity of 100 gallons per minute and includes a control system, instrumentation package, and automated chemical injection system. Operational costs include the energy costs to power the ASH pumps and pretreatment chemicals. Depending on the type of pollutant present in the wastewater, ASH treatment operating costs range from $.20 to $.63 for every 1,000 gallons of wastewater processed.

Hanscom Air Force Base Acquires NoFoam Unit

As a follow up to the TTIPS column in the summer 2001 issue of Currents magazine, entitled "Firefighters Warm Up To NoFoam", the Naval Facilities Engineering Service Center (NFESC) is pleased to announce that the Hanscom Air Force Base Fire Department has initiated procurement of the NoFoam External Unit. The NoFoam External Unit will be used to conduct routine testing on the Aqueous Film Foaming Foam (AFFF) delivery systems for Hanscom's Oshkosh P19 and Oshkosh P23 Aircraft Rescue and Firefighting (ARFF) vehicles. The Hanscom Air Force Base Fire Department has determined that by acquiring a single NoFoam External Unit, they will be able to significantly reduce AFFF wastewater generation and the associated environmental costs incurred with the waste handling of AFFF. The cost of acquiring the NoFoam External Unit, along with the necessary vehicle modifications, testing, and training for both Hanscom's P19 and P23 vehicles totaled $27,000.

In the aftermath of a similar purchase agreement, NFESC received favorable feedback from Marine Corps Air Station (MCAS) Futenma, Okinawa regarding the recent delivery and implementation of their NoFoam External Unit. NFESC installed and field-tested the NoFoam Unit system on five of MCAS Futenma's ARFF vehicles. Vehicle modifications typically took less than one hour per vehicle to perform. The installation and field-testing process had revealed various vehicle AFFF delivery system deficiencies ranging from missing fill connection screens to corroded AFFF fill connection plugs. MCAS Futenma was noticeably pleased with the performance of the NoFoam Unit as well as NFESC's identification and, when practical, correction of the ARFF vehicle deficiencies.

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Chamorros to Capstones

Navy's Award Winning Program Protects Ancient Cultural History of Guam

The island of Guam is estimated to be 42 million years old, and was first inhabited some 4,000 years ago by people from Southeast Asia called Chamorros. Although no full-blooded Chamorros exist today, the island is now home to a cache of innumerable treasures that give testimony to Chamorro culture, as well as to later events that altered the landscape and political climate of Guam since the 1500's.

Located on the Pacific Rim, Guam is situated south of Japan and east of the Philippines, and is in a time zone 14 hours ahead of the United States' East Coast and 17 hours ahead of the West Coast. The largest and southernmost island in the Marianas Islands archipelago, it has a total land area of 212 square miles.

The Treaty of Paris ceded Guam to the United States from Spain in 1898, and in 1899 the Navy took possession of the island. Guam was surrendered to the Japanese in 1941, in whose possession the island remained until 1944, when U.S. forces landed and began liberation.

Commander U.S. Naval Forces, Marianas (COMNAVMARIANAS) acts as guardian of Guam's collection of cultural resources, a role that over the last two years (FY1999 and FY2000) has earned awards from the Chief of Naval Operations, the Secretary of the Navy and the Secretary of Defense. COMNAVMARIANAS owns approximately 43,000 acres of land on Guam.

Jennings Bunn serves as cultural resources manager, historic preservation officer and staff archaeologist for COMNAVMARIANAS, and is also the manager of a small on-base historical exhibit. This year, he accepted the FY 2000 Chief of Naval Operations Environmental Award for cultural resources management.

Bunn came to Guam over 10 years ago on an archaeological contract. After fulfilling the contract, he worked for the Government of Guam's Historic Preservation Office and then began working for the Navy in April of 1994.

"I have made it a goal to learn as much as possible concerning the history of this island in order to pass it on to our visitors to the Command Historical Exhibit," Bunn said. Bunn defines cultural resources as "any and all remaining artifacts, structures, customs, language and beliefs of a people. As to its importance to modern civilization," he continued, "we learn from the past.'"

Chamorros began building Indonesian-influenced monumental architecture on Guam in the year 800 A.D., according to Dr. Hiro Kurishina of the University of Guam Anthropology Department.

Though World War II left its mark on the island, numerous cultural resources remain. The resources managed by COMNAVMARIANAS are of American, Chamorro, Spanish and Japanese origin. Over 41,000 acres of COMNAVMARIANAS land

Guam's Sumay Cemetery, whose retaining wall had deteriorated considerably, was restored by the Commander United States Naval Forces Marianas' cultural resources program. The cemetery was placed on the National Registry in November of 1999.

The latte structures are pillars that were built by Southeast Asians, or "Chamorros," on Guam in 800 A.D. The latte structures are managed by the Commander United States Naval Forces Marianas' cultural resources program.

inventory is included in the cultural resources management planning documents.

Some of the more significant cultural resources on COMNAVMARIANAS include the Advance Base Construction Thematic Nomination; the NOB-Hill Bowl Theater; the Gab-Gab Beach Recreation Area; the Nimitz Hill District; the Fonte Plateau Battleground; Japanese bunkers; Japanese Midget Attack Submarine, and the Sumay Cemetery, the latter of which was placed on the National Register in November, 1999.

In addition, numerous archaeological surveys have been conducted. The earliest surveys were done in 1978; however, with the establishment of the Cultural Resources Manager's position in 1994, attention was focused on fulfilling federal requirements concerning resource management. This emphasis on identification of the resources on Guam has resulted in over 95 percent of the Navy's holdings in the Marianas being archaeologically surveyed. Hundreds of historic and prehistoric sites are now documented and protected. Currently an Integrated Cultural Resources Management Plan is being prepared and will be completed by September 2002.

As the Sumay Cemetery had deteriorated greatly, COMNAVMARIANAS initiated a restoration project in 1996 for a new retaining wall and a restored perimeter wall, which was completed in July 1999. All work was done under the supervision of the mayors of the Agat and Santa Rita villages to ensure that the design for the project was compatible with the historic and architectural qualities of the area.

Though training is conducted on the base, sensitive areas of cultural significance are designated according to three different constraints – No Cultural Resources Disturbance, No Wildlife Disturbance, and No Training. Also, environmental monitoring personnel were assigned and have been given the authority to temporarily halt or modify any exercise or activity deemed to be causing an immediate threat to any cultural resource.

Bunn's favorite cultural resource items on Guam are the latte structures, which are stone pillars with capstones balanced on top that served as the foundations for houses. These pillars date back to 800 A.D. and are among the first structures ever built on the island. The latte structures represent what historically is referred to as "happy labor." In other words, the Chamorro built the structures not because they were forced to but rather as a unified, socially motivated effort.

"The skill, labor and social cohesion that drove these early people to construct such structures is very impressive," he said.

Another significant part of the COMNAVMARIANAS cultural resources plan is its dedication to awareness and education. The base holds a monthly indoctrination program that covers each major environmental program, including cultural resources management.

"Cultural resources and their preservation is the basis of my work here," Bunn said. "More than that is the desire to see that such things are saved for the next generation. I do that by teaching the importance of these remnants of the past to our visitors. Preservation of cultural resources is paramount to the preservation of one's cultural mores. Respect is something that was an integral part of Chamorro culture and is still seen in many aspects of their daily life. Most people respect the ancient villages and believe that the spirits of their ancestors still inhabit those areas.

"I feel that what I do is important and that is what makes my job worthwhile," he continued. "I enjoy my work and, although I am not a native of Guam, I feel that I have helped contribute to the preservation of the island's culture."

"On Guam, the Navy is an excellent steward."

POC:

- Jennings Bunn
- Commander
  U.S. Naval Forces, Marianas
- 671-339-5207
- DSN: 339-5207
- N455@guam.navy.mil

Our Interview With Environmental Quality (EQ) Pelican

The Navy's Mascot Spreads the Good Word About Environmental Stewardship

The following is a summary of an interview with EQ Pelican, the Navy's environmental quality mascot, conducted exclusively for Currents magazine on 31 July 2001.

CURRENTS: Thank you for taking the time to share some of your thoughts with our readers.

EQ PELICAN: I am always happy to talk about the good things I have been doing to promote the Navy's message of sound environmental stewardship.

CURRENTS: How long have you been the mascot for the Navy's environmental programs?

EQ: I was conceived in 1997, during the formative stages of the Public Affairs Office at the Chief of Naval Operations Environmental Protection, Safety and Occupational Health Division (OPNAV N45). A concept for a mascot (or "spokesbeast") was included in N45's first strategic plan for public affairs.

CURRENTS: Why a pelican?

EQ: I am actually an Eastern brown pelican (Pelecanus occidentalis) - a recovered endangered species that is indigenous to the areas surrounding many Navy facilities on the East coast and elsewhere. My friends at N45 believed that my own recovery was a model for the successes they wanted to replicate in their own environmental and natural resource protection programs.

Although we have few natural enemies, our ground nests are sometimes destroyed by hurricanes, flooding or other natural disasters. But the biggest threat to our survival comes from man. In the late 19th and early 20th centuries, pelicans were hunted for our feathers, which adorned women's clothing, particularly hats. During the food shortages following World War I, fishermen claimed that we were decimating the commercial fishery resources and slaughtered us by the thousands.

Our nests were also frequently raided for eggs.

With the advent and widespread use of pesticides such as DDT (dichlorodiphenyltrichloroethane) in the 1940s, our numbers plummeted due to our inability to breed successfully. We ingested DDT by eating contaminated fish that caused us to lay eggs with shells so thin they broke during incubation.

Several of our human friends initiated efforts in the early part of the century to curb the decline of the brown pelican. In 1903, President Theodore Roosevelt designated Florida's Pelican Island as the first national wildlife refuge, a move that helped to reduce the threat of plume hunters.

Passage of the Migratory Bird Treaty Act in 1918 helped to protect us by curbing illegal killing. Subsequent studies proved that we were not, in fact, harming commercial fisheries. This helped to stop our wholesale slaughter by fishermen.

In 1970, the U.S. Fish and Wildlife Service listed us as an endangered species (under a law that preceded the Endangered Species Act of 1973). This meant that we were considered to be in danger of extinction.

In 1972, the Environmental Protection Agency banned the use of DDT in the United States and placed heavy restrictions on the use of other pesticides. Since then, there has been a decrease in the level of chemical contaminations in our eggs and corresponding increase in our ability to successfully incubate. We were the first species to recover from the effects of pesticides.

In 1985, our population on the East Coast of the U.S. (including Florida and Alabama) had recovered to the point that we could be removed from the Endangered Species List.

CURRENTS: What was your first assignment as the Navy's environmental mascot?

EQ: My first public event was the Earth Day Fair in Alexandria Virginia in May 1998. This very hot day did not stop thousands of people from visiting a park next to nearby T.C. Williams High School to learn about what the Navy and our colleagues in the State of Virginia were doing to promote environmental stewardship. This event also marked the first time that Navy environmental booths were used for public outreach. We had one booth dedicated exclusively to clean-up issues and a second booth that addressed a broad range of environmental issues.

The Virginia Department of Conversation and Resources (DCR) brought tanks of fish to the event to demonstrate the impact of clean water and surrounding habitat on fish species indigenous to Virginia. I think the DCR staff was concerned that I might get too close to their tanks and have myself a little snack.

I wasn't prepared for the intense heat that greeted me at my first event in 1998. It was so hot that day that I could only spend twenty minutes in the hot sun every hour or so. And it was hard to take a break when some of the kids didn't want me to leave. One little girl followed me around and wouldn't let go of my wing.

Now, I have some equipment that helps to keep me cool. It's a cooling vest, similar to those used by other mascots, emergency services personnel, and workers who operate in high-temperature environments. The vest incorporates non-toxic, rechargeable cooling gel packs that help me retain a comfortable body temperature for long time periods (typically two to three hours per charge).

CURRENTS: How would you describe your mission/purpose?

EQ: My primary purpose is to spread the good word about environmental stewardship. A big part of my mission is to reach out to schoolchildren. I like to teach them what the Navy is doing to protect the environment, and what even the youngest student can do to be a good steward of the environment. I help children understand how we can co-exist in harmony with sea creatures, birds and other living things. During my visits to the schools, I frequently ask kids to identify the fish, marine mammals, and birds that share the ocean environment with us. This discussion makes for a perfect entry into a discussion of the behaviors that threaten the delicate balance of the marine environment. My Navy friends and I describe the Navy's efforts to keep plastic waste out of the ocean and explain how to minimize household wastes and the resultant impact on landfills. Young folks need to understand how this waste can severely impact my habitat as well as the habitat of other ocean-faring species. I like to leave the kids with a good idea of what the Navy is doing to protect the environment, and what they can do to help.

CURRENTS: What do you find to be most exciting about your job?

EQ: It really has to be interacting with the school children. A big furry mascot like me can really grab their attention and help them understand how environmental protection is relevant to their daily lives. And it's exciting to see them engaged and excited about the environment. Kids can be great emissaries to their parents, brothers and sisters.

CURRENTS: What are your biggest challenges?

EQ: Simple things, like falling down and not being able to get back up. (I often need help from other members of my entourage.) My turning radius is also somewhat limited in tight spaces. With this large beak and my pronounced tail, I always seem to be knocking something over. Sometimes I wish I could have a beeper installed to warn people that I am backing up.

Since everyone wants to give me a hug, I also find it difficult to keep my "suit" clean. My white jumper flap often seems to get wrinkled and dirty. I usually have to get professional help to remain clean and tidy. I also have to worry about people (especially the little kids) stepping on my big webbed feet, so my feet can get pretty sore by the end of the day. And sometimes I have trouble getting dressed. There are some mornings when I need help to make sure that my head is on straight and that my eyes are pointing in the right direction.

CURRENTS: Has your public appearance schedule kept you busy?

EQ: Absolutely. Since my first appearance in 1998, I have visited six states as well as the District of Columbia. To date, I have made over 30 public appearances culminating in my appearance at this year's Navy Environmental Planning Conference. I also participate in the annual International Migratory Bird Day at the National Zoo as part of the "Partners in Flight" program.

CURRENTS: What does your schedule look like for the rest of the year?

EQ: The rest of this year and the beginning of 2002 are looking just as busy. I am already looking forward to the Navy's Earth Day celebration and environmental awards ceremonies in April 2002.

CURRENTS: How does someone go about arranging an appearance of EQ?

EQ: It's simple. All you need to do is send an email message to my agent - Master Chief Fred Engle at N45 Public Affairs. His email address is engle.frederick@hq.navy.mil. Fred will contact you and make all of the necessary arrangements. You can download EQ coloring books from the www.enviro.navy.mil/N45 web site. EQ paraphernalia including hardcopies of coloring books, bookmarks, and posters can be obtained by calling Easter Thompson at N45 Public Affairs at 703-604-5426.

I will promote the Navy's message of sound environmental stewardship whenever and wherever I can.

CURRENTS: Thanks for taking the time to speak with us today.

EQ: Thank you.

Editor's note: Portions of this interview were extracted from an Endangered Species Success Story on the brown pelican. This fact sheet was prepared by the U.S. Department of the Interior, U.S. Fish and Wildlife Service and published in 1995. Additional information on the brown pelican can be found at http://www.nctc.fws.gov/library/Pubs/pelican.pdf.

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Navy Safeguards Marine Life During Shock Trial

Executing Environmentally Sound Tests At Sea

Before a new United States Navy ship is declared sea-worthy, it must endure more than just a bottle of champagne across its bow.

Every Navy ship is subjected to a thorough and demanding series of tests that determine whether it can withstand the unforgiving punishment wrought by sea combat. The USS WINSTON S. CHURCHILL (DDG 81) is no exception. The third ship in the new Flight IIA series of AEGIS guided missile destroyers, the CHURCHILL was subjected to a shock trial comprised of three detonations off the coast of Florida from May to June of 2001.

The CHURCHILL, which is homeported in Norfolk, Virginia, is assigned to Destroyer Squadron 28. CHURCHILL has the distinction of being the only active U.S. warship to be named after a foreign national, as well as the only one among whose ranks serves an officer from Britain's Royal Navy permanently on board. The British officer's presence represents a salute both to the ship's moniker and to the strengthening of the bond between the two Atlantic allies.

Shock trials are conducted on ships that are either the first of a new class to be built or have undergone significant upgrades and modifications (as is the case with the CHURCHILL).

The shock trial essentially involves the detonation of 10,000 pounds of plastic bonded explosives (PBX) explosive charges - equivalent to seven tons of trinitrotoluene (TNT) - near the ship, along with a detailed analysis and evaluation of the effects. Shock trials also test how Sailors will hold up under trauma of a detonation. To date, no Sailor has ever been injured during a shock trial.

As part of the May-June shock trials, the CHURCHILL underwent three explosions. Almost three years before the first explosion, however, the Navy started extensive research in order to minimize the shock and effect on marine mammals.

"No one in the Navy ever intentionally goes out to injure, kill or harass a marine animal", said Lyn Carroll, environmental engineer with the Program Executive Office for Theater Surface Combatants. "At the same time, we are in the business of ensuring the defense of the country."

In studying the physical, biological and socioeconomic environments of three potential shock trial sites, the Navy prepared an Environmental Impact Statement (EIS) that fully examined any potential alternatives to the testing, as well as potential impact on the surrounding environment.

Through the EIS, the Navy determined that an area off the coast of Florida would be the best place to conduct the tests, as it would minimize impact on both the environment and marine fauna. Also, the area was close in proximity to CHURCHILL's homeport, and the nearby naval base could provide an adequate number of ships to support the trials. The trials were conducted in late spring because Northern Right Whales, which reside off the southeastern U.S. coast during the winter months, migrate northward to their summer feeding grounds off New England and in the Bay of Fundy during that time period.

"We developed an extensive mitigation and monitoring program that focused on marine mammals and turtles," said William Sloger, environmental engineer for Southern Division, Naval Facilities Engineering Command (NAVFAC).

Aspects of the environment considered in the analysis included air quality, water quality, commercial fishing and shipping, recreational use of the proposed test area, and lasting impact on the environment. In addition, the terms of the National Oceanic and Atmospheric Administration (NOAA) Fisheries Letter of Authorization were closely followed.

"We went to great lengths to ensure that the Navy was fully compliant with the highest standards of environmental stewardship," said CDR Michael T. Franken, commanding officer of the CHURCHILL. "This was important not only in terms of protecting a fragile ecosystem in the area of our shock test,

but also for all future at-sea tests in which damage to marine life is possible if proper precautions are not enacted."

The area selected for the trials underwent extensive aerial surveys two days prior to each detonation and was found to have low marine mammal and turtle populations. On the day of each detonation, aerial surveys, shipboard monitoring and passive acoustic monitoring were conducted. If any marine animals were sighted and/or detected within two nautical miles of the charge, detonation was delayed.

Carroll was on the bridge of the CHURCHILL for the third detonation. She admits she was a bit nervous.

"It's scary because you don't know what's going to happen," she said, adding that, due to her expectations, the blast was somewhat anticlimactic.

"It was like a sharp crack," she said. "The ocean kind of bubbles up and the water sprays out."

Immediately following each detonation, the testing area was monitored for any signs of injured or dead marine animals. For the following two to seven days, aerial monitoring took place for a minimum of three hours each day, down current from the detonation sight.

Carroll said neither dead nor injured animals were found.

"That shows that we took the issue of mitigation seriously, devised a thorough plan and executed that plan as stated in our Environmental Impact Statement," she said.

The Marine Animal Recovery Team (MART), made up of a veterinarian, a marine mammal behaviorist specialist and a sea turtle expert, assisted the aerial and shipboard monitoring teams. The MART then remained in the area, down current from the detonation point, for 48 hours after each detonation and for seven days following the last detonation.

"The AEGIS Shipbuilding Program Office was very supportive of mitigation efforts from the start, and they set the tone for the level of support extended to the mitigation team from the rest of the shock trial team," said Janet Clarke, Mitigation Team Leader from Science Applications International Corporation. "There were occasions during the test when environmental conditions caused test delays, and the program office stood behind the decisions made by the mitigation director and lead scientist completely."

" I think that the ship shock test demonstrated that large scale Navy testing can be done in an environmentally sound manner when reasonable environmental mitigation is included and planned for from the start," Clarke continued.

Such dedication may seem extreme, but the results cannot be contested.

"The Navy was willing to allow environmental considerations to steer where the shock trial might occur," Sloger said. "I think that shows the Navy's commitment to protect the environment."

"The Navy has led the way in many aspects of protecting our oceans, from environmentally friendly paints to oil-water separators. Any adverse impacts associated with DDG 81's shock test would affect our good name in the maritime arena," Franken said.

"Much work has been done to establish the Navy's high standard of ensuring that we execute our mission without marring our oceans," he continued. "This ship and its crew were not about to threaten our reputation as model environmental stewards."

"I consider the test a success and am happy to have been part of it."

POC:

- Lyn Carroll
- Program Executive Office for Theater Surface Combatants
- 202-781-1983
- DSN: 326-1983
- CarrollLB@navsea.navy.mil

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SHRIKE BACK

BIRD EXCLUSIVE TO THE NAVY GETS A HELPING HAND

Though it appeared as if the laws of fate had intended this little bird to be the stuff of history books, the San Clemente (SC) Loggerhead Shrike had a steadfast advocate in the form of the United States Navy.

San Clemente Island, a 56-square-mile island under the authority of the Navy, is located just over 60 miles northwest of San Diego. It is also the only residence of the Loggerhead Shrike. Today, estimates place the number of San Clemente Loggerhead Shrikes at only 190 at most, including 54 in captivity.

The San Clemente (SC) Loggerhead Shrike, or Lanius ludovicianus mearnsi, is a medium-sized bird that resembles a mockingbird, with striking black, white and gray plumage. They have black tails and large heads with powerful hooked bills, and primarily occupy the canyon woodlands of the island.

In 1977, the United States Fish and Wildlife Service listed the SC Loggerhead Shrike as "endangered" under the Endangered Species Act.

The SC Loggerhead Shrike preys on insects and lizards, which it stalks from its perch in sage shrub and chaparral. The bird usually seizes its prey on the bare ground between bunch grass and impales the prey on shrub thorns or small branches. This curious act is probably the shrike's most well known habit. Mainland sub-species of shrike kill their prey in the same manner.

In the late 19th century, ranchers introduced feral cats, sheep and goats, along with a number of non-native grasses, all of which contributed to a decline in the number of SC Loggerhead Shrikes. As did the native foxes and migrating hawks, the feral cats preyed on the shrikes. The sheep and goats ate much of the island's vegetation, including the sagebrush and chaparral that provide perches for the shrikes, and the foreign grasses provided ample cover for the birds' prey. In the early 1900s, the bird's population oscillated around twenty.

Around 1934, the Navy took ownership of the island, and by 1991 had established a stewardship program to save the shrike. The shrike program is managed by Commander Navy Region Southwest's (CNRSW) Natural Resources Office, and supported through Navy-initiated contracts with the Institute for Wildlife Studies, the Point Reyes Bird Observatory and the Zoological Society of San Diego. In addition, the Navy cooperates with the U.S. Fish and Wildlife Service in planning for the shrike's survival.

Saving a species is no small undertaking, and entails myriad duties including monitoring population, marking birds and even captive breeding. It is safe to say that, without human intervention, the SC Loggerhead Shrike could not be saved.

"The birds need constant attention and vigilance on our part," said Jeff Opdycke, conservation project specialist and shrike project coordinator with the Zoological Society of San Diego. He added that the effort requires laborious study; feeding and watering; capturing and banding; weighing and transferring from cage to cage; and treatment for disease and injury.

"And they can be downright unthankful," Opdycke joked.

The Zoological Society of San Diego employs eight full-time and three seasonal employees working on the

island, studying and husbanding loggerhead shrikes; which doesn't include the many behavior and propagation managers, lead scientists, and vet, nutrition and genetic staff members whose time is provided by the zoo.

For the labor-intensive, twice-yearly duty of surveying the entire island for loggerhead shrikes, volunteer support is required.

"Without the volunteers, we are unable to effectively cover neighboring canyons simultaneously or cover nearly as much ground thoroughly," said Dr. Kelly Brock, San Clemente Loggerhead Shrike program manager with Commander Navy Region Southwest.

The birds are banded because "it's vital to pinpoint individuals in the population, "

Opdycke said. "If the birds are released and hard to catch, and you need day-to-day information on individuals, colored leg bands can be put on in certain unique sequences and can be "read" through binoculars," he added.

As for weighing the shrikes, weight is an indicator of the bird's health and can reflect whether its nutritional needs are being met.

"When you deal with animals that can't talk and tell you how they are feeling, you need to measure as many variables as you can, and weight is a critical measure and a revealing one," Opdycke said.

Slowly, the effort has been paying off. This year, it was noted that, of the 45 surviving SC Loggerhead Shrikes that were released into the wild over the last three years, 19 produced a total of 28 offspring. For the people working to save the bird, this is the most rewarding experience.

"This kind of work is about life and death," Brock said. "Knowing that some individual birds will most likely be lost once released into the wild, it becomes comforting and extremely gratifying to know that many make it and live the way nature intended them to."

"My job is extremely challenging," she added. "In many ways, balancing the military mission with natural resource conservation can feel like fitting a square peg through a round hole. So, when we experience successes like we have been experiencing in the last two years, it feels very rewarding to be a part of it."

"We are proud to be working with the Navy on this project, and feel that the Navy is bringing quality decisions and excellent people and brains to bear on this issue," Opdycke said.

POC:

- Dr. Kelly Brock
- Commander, Navy Region Southwest
- 619-545-3426
- DSN: 735-3426
- Brock.Kelly@cnrsw.navy.mil

Navy Environmental News
Currents
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Weeding Out Desert Aliens

Dune Restoration Ensures Survival of Rare and Endangered Plants

Eradicating invasive alien species may not sound like a duty for a U.S. Navy school, but one on the West Coast has been pursuing this duty for almost 10 years.

Since 1992, the U.S. Navy Postgraduate School (NPS) in Monterey, California, has battled foreign plant species that have suffocated indigenous plants on the school's 40 acres of beachfront property at the southern end of Monterey Bay. An estimated 20 percent of the property contained relatively pristine sand dunes.

The property's soil ranges from decomposing granite to topsoil as a result of its different types of landfills, which encourages the growth of weeds, such as European beach grass, rather than native plants. Most of the soil was deposited half a century earlier when the property belonged to the old Del Monte Hotel.

The dune restoration project began as a result of a severe freeze in 1990 that killed acres of an exotic ice plant from South Africa, a species that smothers and replaces native coastal plants in California. Since the species was weak yet regenerating quickly, the Navy, along with the City of Monterey Parks Division, decided to attack.

The Navy funded the initial $300,000 dune restoration project, and Bruce Cowan, a semi-retired environmental consultant and landscaper, was hired to implement the project.

"The freeze provided an opportunity to undo some of the damage and restore much of the property to native vegetation, improving the habitat for long term survival," Cowan said. "I served in all capacities, from project coordinator to weed puller, for the next nine years."

Among the native plants under siege by the foreign invaders are some rare and endangered species, such as the Monterey spineflower, Dune buckwheat, Monterey paintbrush and Coast wallflower.

The first step was to spray glyphosate on the recovering ice plant, along with other destructive foreign plants, such as European beach grass. This initial step left the area rather barren. Next, all weeds and ice plant seedlings were pulled out of sensitive areas containing the rare species.

After the ice plant and the weeds were sprayed and pulled, the area had an empty gray and brown look, Cowan said, likening it to "the aftermath of a fire." The lackluster landscape sparked some criticism.

"I was confident that new plantings would take hold and change the appearance within a few months," he said. "I explained that you have to scrape the old paint off a building before you can apply the new paint."

After the weeds were pulled, approximately 88,000 plants, representing 50 different species, were planted, the majority of whose seeds were collected on site. Basic planting was completed by April 1994. Then, a special fertilizer packet was inserted with each plant. This special fertilizer greatly increased the growth and seed production of the individual plants while not favoring the surrounding weeds (as would have happened with a standard fertilizer).

The project was off to a great start. But it soon became evident that due to the rapid continual growth of the South African ice plant, natural shore erosion as well as erosion brought on by El Nino in 1997, yearly, supplementary maintenance was necessary. This additional maintenance increased the annual costs by $20,000 – a cost incurred by the Navy.

"We found it was absolutely necessary to continue to eliminate ice plant seedlings, which can grow from the size of a single grain of rice to a vigorous mat covering one or more square meters of native plants in a single year," Cowan said.

Today, Frank Vogl, NPS environmental coordinator, coordinates the project. "We are in the 'dunes maintenance' mode at this time," Vogl said. "Many of our efforts are focused on weed control."

Vogl also performs an annual survey to assess and document the status of sensitive plants, and this winter, 5,000

native beach grass plants will be planted along the shoreline.

"We live in a wind blown environment and, without vegetative cover, the dunes would migrate," Vogl said.

Vogl takes a great deal of pride in his work and finds the natural resources of the area strikingly beautiful. "The classic icon for this area is the wind-sculpted Monterey cypress tree, similar to the Lone Cypress of Pebble Beach," California, he said. "We have the classic California winter with little or no precipitation the rest of the year. The coastal fog and overcast help to keep our temperatures moderate all year. We have a short, but spectacular, growing and blooming season, but enter into a drought-resistant dormancy for the rest of the year."

To date, the European beach grass has been completely eradicated from the area. Cowan said that the native plants are thriving and reproducing, and expanding their ranges. Several species have multiplied from a few dozen plants to many thousands of plants.

"Before the dune restoration project was initiated, only a few small areas of natural dune habitat remained on the property. The bulk of the dune was covered with green mats of ice plant and many colonies of weeds," Cowan said. "After the freeze, acres of dead brown ice plants gave the property an almost sinister look.

"As the thousands of planted native perennials and shrubs reseeded and filled in, the overall look of the dune changed from a landscaped appearance to a more natural appearance. This gives the impression that the dune was always natural and required no special plantings at all," he added. "This, of course, was my goal all along."

"This dune restoration project has been the most rewarding and challenging project of my career," Cowan said. "The Navy deserves credit for this restoration, which was undertaken voluntarily. We did this because we are concerned about the environment around the dunes – not because we were required to by law."

"This project shows that sensitive habitat and endangered species can thrive in close proximity to an urban area."

An exotic yet invasive ice plant from South Africa covers the coastal dunes on the southern end of Monterey Bay, located on the property of the United States Navy Postgraduate School in Monterey, California. The ice plant choked out all native vegetative species.

The coastal dunes on the southern end of Monterey Bay, located on the property of the United States Navy Postgraduate School in Monterey, California look as they normally should due to an effort by the Navy to eliminate a non-native, invasive ice plant from South Africa, which was smothering the native plants.

POC:

- Frank Vogl
- U.S. Navy Postgraduate School
- 831-656-2841
- DSN: 878-2841
- fvogl@nps.navy.mil

Navy Environmental News
Currents
Pollution Prevention & Compliance

Navy Continues to Protect Marine Life Off the East Coast

Northern Right Whales Have a Good Year

Every year, northern right whales begin their autumn migration to warmer waters of the southeastern United States. And as certain as this annual migration is, so too is the Navy's commitment to protecting these endangered baleen whales as they transit through waters off of the coasts of South Carolina, Georgia, and Florida, in search of warmer, shallow coastal waters to give birth to their calves.

The northern right whale is one of the most critically endangered marine mammals with estimates of approximately 300 right whales remaining in the North Atlantic. Adult whales can reach sizes of up to 55 feet long and calves can reach sizes of 20 feet long. The whales have distinctive "V-shaped" blows, no dorsal fins, short and broad flippers and deeply notched tail flukes with smooth trailing edges.

Since 1997, as a result from consultations with National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly known as National Marine Fisheries Service), the Navy agreed to employ year round measures designed to protect northern right whales and other endangered species while operating in a special "consultation area." The "consultation area" encompasses sea space from Charleston, S.C., southward to San Sebastian Inlet, Florida, and from the coast seaward to 80 nautical miles from shore.

Parts of the "consultation area" serve as critical habitat and winter calving grounds and nursery areas for the migratory northern right whales. The critical habitat encompasses an area from SUBASE Kings Bay, Georgia, to south of NS Mayport, Florida, including offshore shipping lanes and operating areas where Navy units conduct exercises.

The Navy has developed steps specifically designed to safeguard the whales during the calving season from December 1 to March 31. According to Ken Conley, natural resource conservation specialist, the Commander, Navy Region Southeast (CNRSE) team, has developed a series of training aids, videos, posters and other hand out materials used to educate ship's lookouts and navigators on Navy vessels and aircraft about the northern right whale. "While operating in critical habitat, Navy surface ships and submarines are posting vigilant look-outs and bridge watchstanders who are trained to identify and report right whales," said Conley.

Navy vessels are required to use extreme caution during transit through

the critical habit and ensure they maintain a buffer of 500 yards from whales and by proceeding at the slowest possible speeds to afford adequate stopping distances as circumstances and ocean conditions change. In addition, Navy ships will not conduct north-south transits in the critical habitat area or while operating in an Associated Area of Concern (AAOC) which extends another five miles eastward beyond the federally designated critical habitat.

Leading the Navy's stewardship effort is the Fleet Area Control and Surveillance Facility, Jacksonville (FACSFAC). FACSFAC's team of operations specialist are the designated coordinators for fleet

operating areas and related air space and also man the "Whale Fusion Center." According to Captain Bill Evers, FACSFAC commanding officer, his team of specialists coordinate ship and aircraft clearance into the right whale critical habitat and the surrounding operating areas based on prevailing weather, surface conditions, whale sightings, and the mission or event to be conducted.

"The communications network and reporting system that is in place ensures the widest possible exchange and dissemination of right whale sighting information to Department of Defense, Coast Guard and civilian shipping vessels," said Evers. "Prior to entering the critical habitat, Navy ships are required to contact the FACSFAC to obtain the latest whale sighting information and must report whale sightings to the center," he added.

According to Chris Slay from the New England Aquarium (NEA), this past season was a banner year for right whales with more than 16 calves documented. "We (NEA) would like to thank all those in the shipping community, commercial and military, for their efforts to limit the potential for ship/whale collisions. FACSFAC has done an incredible job getting the whales' locations to the people that need them."

In addition to FACSFAC's stewardship efforts, CNRSE works in coordination with the Florida Department of Environmental Protection (FDEP), Georgia Department of Natural Resources (GDNR), the New England Aquarium, the Marine Mammal Commission and other partners within the Southeastern U.S. Implementation Team (SIT) for the Recovery of the Northern Right Whale headed by NOAA Fisheries. During the 2000-2001 season, more than 500 whale sightings were reported to FACSFAC. During the entire 1999-2000 season, 52 sightings were reported to FACSFAC.

CNRSE and FASCFAC are also a major component of the SIT's Northern Right Whale Early Warning System (EWS). In fact, CNRSE contributes nearly $100,000 annually to support the EWS. "The Navy is very committed to protecting the northern right whale. Following six whale deaths in 1996 from ship strikes and natural causes in the southeast, there have been no more deaths from ship strikes. Improved EWS aerial surveying, better sighting techniques, and more efficient sighting reporting procedures by FASCFAC have significantly reduced the potential for ship-whale collisions," said Conley. He added, "Through our efforts and those of our partners, the endangered northern right whale has a better chance of surviving."

For updated whale sighting information, visit www.facsfacjax.navy.mil.

POC:

- Bob Nelson
- Commander, Navy Region Southeast
- Environmental Public Affairs Officer
- 904-542-4032
- DSN: 942-4032
- nelsonr@cnrse.navy.mil

Northern Right Whales have had a banner year for calving in the Southeastern United States according to the New England Aquarium. More than 100 sightings have been reported since 1 December, 2000.

CECOS Announces Natural Resources Training Program

The Civil Engineer Corps Officers School (CECOS) has scheduled a series of natural and cultural resource classes to be held through the middle of 2002. Under the auspices of the Interservice Environmental Education Review Board (ISEERB), these classes are open to military and civilian personnel of the Department of Defense (DoD) and the United States Coast Guard (USCG). Courses are offered "tuition-free" to DoD and USCG civilian and military personnel.

NATURAL RESOURCES COMPLIANCE (CANTRAC NO. A-4A-0087, CDP: 3369)

February 19-22, 2002: Key West, FL

July 9-12, 2002: Newport, RI

This course offers instruction in specific natural resource laws, regulations, policies, Executive Orders, DoD Instructions, and other guidance, noting service-specific requirements. Course addresses stewardship, preservation, and process; fish, game, and wildlife management laws; protection of wetlands, waterways, and other protected ecological areas; forest and land use management laws; and interservice cooperation. Practical exercises and guest speakers are included. The sponsor for this course is the Chief of Naval Operations (CNO) (Code N45D).

Target Audience:
Natural and cultural resource managers and personnel, environmental lawyers (or lawyers in that capacity), civil works natural resource managers (U.S. Army Corps of Engineers), natural resources law enforcement personnel, and environmental staffs. This course is specifically required for certain Navy personnel under Chapter 24 of OPNAVINST 5090.1B, CH-2.

INTRODUCTION TO CULTURAL RESOURCE MANAGEMENT LAWS AND REGULATIONS (CANTRAC NO. A-4A-0070, CDP: 3358)

January 22-24, 2002: Puerto Rico

July 23-25, 2002: Seattle, WA

This three-day seminar provides an integrated overview of all pertinent laws and regulations needed to understand and fulfill cultural resource manage ment responsibilities. The curriculum is designed around a series of inter-related case studies discussed during the seminar. The seminar is taught in conjunction the Advisory Council on Historic Preservation. The course sponsor is Office of the Assistant Secretary of the Navy for Installations and the Environment (OASN (I&E)), Navy Federal Preservation Officer.

Course content includes, but is not limited to the following:

- National Historic Preservation Act,
- Archeological Resources Protection Act,
- American Indian Religious Freedom Act,
- Native American Graves Protection & Repatriation Act, and
- Project Planning, Programming and Implementation.

Target Audience:
Cultural resource, natural resource, real estate, and contracting specialists, as well as other primary duty and collateral duty personnel whose job activities affect stewardship of cultural resources and compliance with federal laws and DoD policy. This course is specifically required for certain Navy personnel under Chapter 24 of OPNAVINST 5090.1B, CH-2.

HISTORIC PRESERVATION LAW AND SECTION 106 COMPLIANCE (CANTRAC NO. A-4A-0073, CDP: 335C)

October 23-25, 2001: Oahu, HI

April 9-11, 2002: Silverdale, WA [Department of Navy Housing]

June 11-13, 2002: Jacksonville, FL [Department of Navy Housing]

August 20-22, 2002: Norfolk, VA

Specially customized offerings of "Historic Preservation Law and Section 106 Compliance" (HPL&106C) are being offered for Navy Housing personnel April 9-11 and June 11-13, 2002 pursuant to new Programmatic Agreement regarding management of Department of Navy historic family housing. Department of Navy housing personnel will be given preference in quotas for those offerings. The standard offerings of the HPL&106C course scheduled for October 23-25, 2001 and August 20-22, 2002 are open to personnel of all ISEERB components.

This three-day seminar emphasizes legal compliance (the Section 106 process) through the use of actual case studies. It addresses legislation and the process to meet the requirements of the law. Course content includes but is not limited to the following: the stewardship role, use of historic properties, and communications with related oversight agencies (i.e., State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation). The sponsor for this course is OASN (I&E), Navy Federal Preservation Officer.

Target Audience:
DoD activity personnel assigned to cultural resource duties to achieve and maintain compliance with the National Historic Preservation Act (NHPA) and other related cultural resource regulations. It is recommended that this course be taken after Introduction to Cultural Resource Management Laws and Regulations course. This course is specifically required for certain Navy personnel under Chapter 24 of OPNAVINST 5090.1B, CH-2.

NATIVE AMERICAN TRADITIONS AND CULTURES [Implementing DoD Native American Policy] (CANTRAC NO. A-4A-0085, CDP: 3366)

May 20-24, 2002
(location to be determined)

This course highlights responsibilities of military commands for establishing and maintaining consultative relationships with Native Americans under laws, regulations, and DoD guidance and directives, including the new DoD American Indian and Alaska Native Policy. This course features region-specific geo-cultural variations on Native American traditions, cultures, issues, and communication modes within a nation-wide core curriculum for the contiguous 48 states. This course trains participants in cross-cultural communications, Government-to-Government consultations, Tribal sovereignty, areas of conflict, and dispute resolution. Federal statutes and Executive Documents require DoD and its components to protect cultural resources, such as archaeological and sacred sites, associated with Native American Indian peoples. Requirements include identification and inventory of those Native American cultural resources that are on DoD lands or affected by DoD actions, advance consultation with Native Americans, safeguarding Native American sacred objects and sites from the effects of military operations, enabling access to sacred sites on military lands, and consultation regarding the disposition of human remains and funerary objects.

Target Audience:
Military Officers responsible for DoD land are responsible for initiating and maintaining appropriate consultative relationships with Native American groups that either ancestrally occupied the property, or who otherwise are potentially affected by DoD activities. This course is offered for those Commanding Officers and for their staff who have assigned duties related to these consultative and cultural resource protection matters.

For technical questions concerning the content of any of these courses, contact the Course Director, Steve Covell. For questions concerning registration, or confirmation packets, please contact the CECOS Registrar at 805-982-2895 or DSN: 551-2895.

Register for CECOS classes on-line via the CECOS website: http://www.cecos.navy.mil.

If you are unable to register on-line, please contact the CECOS Registrar at the above referenced numbers and request a "FAX QUOTA REQUEST FORM." Complete the form and submit it (via facsimile) to the CECOS Registrar at 805-982-2918 or DSN: 551-2918.

POC:

- Stephen Covell
- Civil Engineer Corps Officers School
- 805-982-5078
- DSN: 551-5078
- CovellSA@cecos.navy.mil

Majestic Navy Green

Preserving the Old Growth Forest

The Navy is working hard to preserve over 275 acres in the foothills of the Cascade Mountains - the majestic old growth forest.

Located approximately 50 miles north of Seattle, the forest surrounds wetlands, the Upper and Lower Twin Lakes, and Cub Creek, all in the Puget Trough. The forest is not only a tranquil natural beauty, but represents a venerable relic to the United States - an old growth Sitka spruce forest that predates European influence. The oldest tree in the forest, a western red cedar measuring over 10 feet in diameter, is estimated to be 1,500 years old, dating back to the age of King Arthur's Britain.

The forest, which is home to myriad species of flora and fauna, is under the stewardship of the U.S. Navy and is, in fact, the single largest natural resources conservation project ever undertaken by the Navy. It is located 30 miles east of Naval Air Station Whidbey Island.

There are many characteristics that distinguish an "old growth" forest from a typical forest. Among the differences are that old growth forests are older than most other types of forests, have biological diversity based on the structural diversity of the forest, and have floors with multiple layers and large amounts of organic debris.

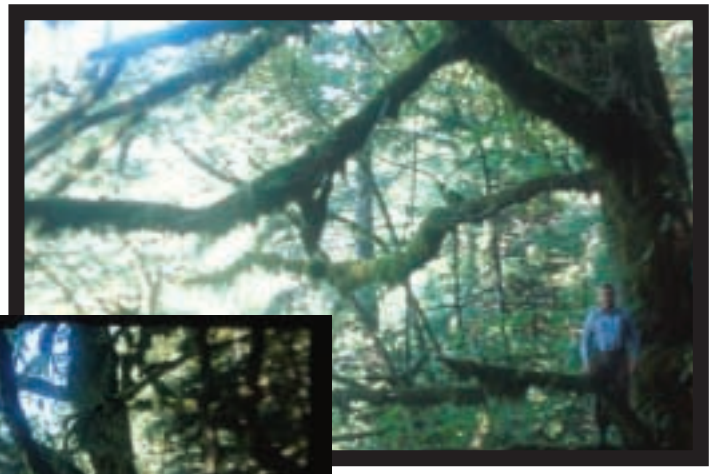
Walter Briggs, forester with Naval Facilities Engineering Command West Coast, has been working to preserve the forest for 17 years. "It is beautiful, awe-inspiring, intricate, complex and spiritually refreshing," Briggs said of the forest. "It is an astounding natural wonder."

Briggs still remembers the first time he saw the forest, 33 years ago. "I stood in the midst of a giant Sitka spruce and thought, 'This must be saved,'" he said.

"Fifteen years later, I was standing in the middle of the grove of the largest Sitka spruce," Briggs continued. "A rabbit came out from under the buttressed roots of an ancient spruce, hopped to within two feet of me, ignored me and went about his business. How wonderful that he saw me and had no fear."

The Navy purchased the lands surrounding the old growth forest from private forestland owners in 1949 to build and operate a naval radio station transmitter. The sellers retained the cutting rights to the timber. By 1955, the majority of the area had been logged, except for the old growth forest.

Today, the forest is managed according to an Integrated Natural Resources Management Plan (INRMP) and is home to tree species such as Sitka spruce,



western red cedar, Douglas fir, western yew, bigleaf maple, vine maple, cascara, red alder and willow. The forest is also home to a variety of wildlife including swans, geese, ducks, northern goshawks, ospreys, barred owls, songbirds, cougar bears and porcupines. The threatened-status marbled murrelet, a small bird dwelling in coastal areas of the Pacific Northwest, also resides in this forest.

Because of the presence of the marbled murrelet and the civilian recreation, military orientation and survival training that take place nearby, forest management has been a challenge.

"These divergent uses and responsibilities have been integrated through careful planning and construction of hiking trails, use of alternate areas during the breeding season and by maintaining recreational use within an historic carrying capacity that will not conflict with the bird," Briggs said.

A proposed recreational trail once had to be rerouted when Briggs and a wildlife biologist determined it would be in the presence of a marbled murrelet nesting colony.

On fishery issues, the Navy works with other organizations, such as Trout Unlimited, state and federal agencies, and even the Stillaguamish Tribe and the Stilly-Snohomish Fisheries Enhancement Task Force (SSFETF). SSFETF was established in 1990 as a not-for-profit organization to ensure the future of salmon in the Stillaguamish and Snohomish watersheds - a combined land area of more than 2,400 square miles - and to improve and restore the recreational and commercial fisheries of the Pacific Northwest.

Today, the Navy uses Geographic Information Systems (GIS) to help manage the forest. GIS is used to record and store forest stand maps, inventories, roads, streams, property lines, and wildlife observations among other sets of data. "This is an easy and modern way to store, retrieve and adjust natural resources information over time," Briggs said.

In 1992, through the Department of Defense Legacy Resource Program, Briggs applied for and received a grant for three million dollars to purchase cutting rights to the forest from the private timber company that held the rights.

According to Briggs, the management of the old growth forest clearly demonstrates the Navy's commitment to stewardship of the natural resources with which it is entrusted. "I feel great personal and professional satisfaction in playing a part in preserving this interesting and magnificent forest," Briggs continued. "After all these years, it is still thrilling to walk through it and explain it to school kids, visiting dignitaries and military brass."

To Briggs, the forest is a national treasure. "I feel honored and proud to have had the opportunity to work for the preservation of this stunning forest," he said. "It is universally admired by those who have a chance to visit it."

POC:

- Walter Briggs
- Naval Facilities Engineering Command
- 360-396-0922
- DSN: 744-0922
- BriggsWR@efanw.navfac.navy.mil

Spotlight on Dan Pearson

Rescuing Marine Mammals in Crisis

Dan Pearson, an Environmental Protection Specialist for the Naval Facilities Engineering Service Center, dedicates much of his free time to the rescue and transport of marine mammals in crisis.

Dan's official duties at the Port Hueneme, California Ventura County Naval Base include Spill Prevention Control and Counter Measures (SPCC), hazardous materials, solid waste and pollution prevention. But after hours, Dan volunteers his time and resources to help the Point Mugu Wildlife Center establish a much-needed saltwater supplied marine mammal and oiled wildlife rehabilitation facility in the Port of Hueneme. He admits to a lifelong fascination with marine mammals, especially large whales. For a few years, most of his volunteer work involved rescuing and transporting dolphins, small whales, seals and sea lions.

CURRENTS: When did you start to become concerned with the fate of marine mammals?

PEARSON: I was very young. I grew up in Port Hueneme where seals and sea lions were always "hauling out" on the beaches. I was amazed by their size and grace. Over the years, my amazement evolved into a concern for their well being.

CURRENTS: When did you actually start working with marine mammals?

PEARSON: In the late 1960s, I was fortunate enough to get a job at Point Mugu's Marine Bio-Science Facility located near the Naval Air Station's lagoon. That is where the Navy was working with dolphins, small whales (including two Orcas), sea lions, and Elephant and Harbor seals. During my two-year tenure at the Marine Bioscience Facility, I learned about marine mammal husbandry and how to work around marine mammals without getting bitten.

CURRENTS: How did you get involved in marine mammal rescues?

PEARSON: I've always been interested in animal welfare. I used to take care of wounded birds when I was a kid in Texas (before you needed a permit). I bought my truck with the idea of using it to help injured animals on local beaches. When I learned that the county's animal control agency was no longer transporting stranded marine mammals to a rehabilitation facility in Los Angeles, I wrote to them and offered my services, my gas and my time. They eventually called me to ask if I would transport a small sea lion to the marine mammal rehabilitation facility at Fort MacArthur (in San Pedro, about 75 miles south). I said, "Sure." And that's how the relationship started.

CURRENTS: How did things progress?

PEARSON: Well, the work was seasonal - early March through June or mid-July - mostly on the weekends, so it didn't interfere with my Navy responsibilities. I was working mostly with pups, sea lion pups, and the occasional Harbor seal pup and Elephant seal pup.

CURRENTS: Would these animals give you any trouble?

PEARSON: Most times the sea babies were so tuckered out that they couldn't give you much trouble. Capturing them would simply be a matter of throwing a towel over their head so they couldn't see to bite you, and then picking them up and placing them in one of the dog cages we used to transport them to a rehabilitation facility.

But the bigger the animal, the harder the rescue. The larger mammals can appear to be fighting for their lives. They put up a significant effort to resist your rescue plans. They have no idea that you're trying to help them. After subduing them, the hardest part was getting them into a cage without causing additional trauma. Our cages were built for dogs, not large wild animals with flippers. One baby sea lion had an injured shoulder so we needed to fold his flipper against his body in order to fit him into the cage. It must have been extremely painful.

A fellow Navy employee, Jai Jeffery, eventually modified our cage so that it opened up like a clamshell. This design allowed us to place an animal into the cage rather than forcing it through a small front door.

CURRENTS: What would you do after you got the animal into the cage?

PEARSON: We would drive directly from the beach or the shelter to a rehabilitation facility. The reaction these animals would elicit from people was always amusing. As we drove along the freeways, people would point at the back of the truck, making sure their children saw what was in the cage. One

Dan Pearson with "Dinky" at Naval Air Station Point Mugu in 1969.

Dan Pearson in front of the truck he uses to rescue marine mammals.
photo by Scott LaRaia

time an entire busload of children had their faces pressed to the windows trying to get a better look at an elephant seal.

CURRENTS: Did you ever have misgivings about this work?

PEARSON: Working with wild animals always involves some heartbreak. We would see animals so torn up by fishing nets around their necks or across their eyes or snouts that it was difficult just to transport the animal. And it was difficult for me to see.

CURRENTS: Besides human interaction, what else causes an animal to "haul out" onto a beach?

PEARSON: A parasite called lungworm that infests the lungs of sea lions can cause them to "haul out." This parasite can limit the sea lion's capacity to hold its breath. This, in turn, limits the sea lion's ability to dive long enough to catch anything to eat. They slowly starve, end up on a beach - dehydrated and too emaciated to swim. Underweight Elephant seal pups "haul out" as a result of being injured by an adult seal squashing them on the pupping beach. Some animals "haul out" to recover from a shark bite. And then there are those with gunshot wounds.

CURRENTS: Are you ever concerned with interfering with the natural order of things by "rehabbing" these animals?

PEARSON: I don't believe that our animal rescue efforts significantly affect the population biology of marine mammals in California. The survival of any species of marine mammal, from Blue whales to our local sea otters, is not dependent on our actions.

CURRENTS: Then why do you do it?

PEARSON: Because there are virtually no places in Southern California where an exhausted and distressed marine mammal can haul out and expect to be left alone. Even though the Marine Mammal Protection Act of 1972 is very specific about what constitutes harassment of a marine mammal, it is rarely enforced. People poke these animals with sticks, throw rocks at them, sic their dogs on them, photograph their children sitting dangerously close to them, pour seawater on them, and sometimes even take the little ones home and put them in a bathtub. Weakened by disease and starvation, these animals are in no condition to defend themselves. That's why we transport these animals to a safer place.

CURRENTS: Are you still providing marine mammal rescue services?

PEARSON: I have shifted the focus of my free time toward establishing a saltwater supplied rehabilitation facility here, in Port Hueneme, on former Navy land. We are working with the Oiled Wildlife Care Network of the California Department of Fish and Game and the University of California at Davis to qualify for a construction grant. We are forming a coalition of local wildlife care groups, community colleges and our new state university to qualify for the grants so we can build a much needed rehabilitation facility. We are enjoying widespread community support and hope to form this coalition before the end of the year. There are no saltwater tanks between San Diego and Monterey large enough to provide on-going care for stranded dolphins. A facility with saltwater pools in Ventura County would fill that need very well.

CURRENTS: Good luck.

PEARSON: Thank you.

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USS Thorn to the Rescue

Ship's Crew Frees Trapped Sea Turtle

Although deployed Sailors often conduct drills in life saving measures, the crew from the USS Thorn (DD 988) recently had an opportunity to put that training into action. While at sea in the Mediterranean on 10 July, 2001, the crew saved the life of one of the ocean's oldest and most gentle creatures – a sea turtle that had become entangled in a fishing net.

"We were flying on a routine patrol when we spotted something in the water," said HSL-46 Detachment One, co-pilot Lt. j.g. "C.J." Warren. "We circled around for about three or four minutes until we figured out it was (a group of) sea turtles. The net they were trapped in was pretty easy to spot from the air."

After assessing the situation, the Mayport, Florida-based crew called back to the ship and recommended that something be done to assist the turtles. "Although some people may question the logic of helping a turtle," said Warren, "it was a situation where our help was desparately needed."

When the call came in, the ship's executive officer, Lieutenant Commander Scott Chapman, discussed the situation with the ship's captain. "In these types of situations, you never quite know what you're getting into," said Chapman, a native of Alexandria, Virginia. "We definitely wanted to help, but we were also aware that it could be very dangerous. We decided to deploy our RHIB (Rigid Hull Inflatable Boat) and that I should accompany the crew."

"At first, I had no idea why we were going out," said RHIB member, Sonar Technician Third Class Petty Officer Jefferey Illner of Spartanburg, South Carolina. "All I was told was to make sure I brought my knife with me."

The Thorn's course happened to be right in line with the location of the turtles. The ship arrived on the scene quickly and prepared for action. The Thorn launched its seven-crewmen RHIB (which is more routinely used to rescue people in distress).

"When we got there, it was pretty grim," said Illner, "We could tell something was wrong because of the smell." The Thorn team found a total of four sea turtles entangled in the fishing net. Although three of the turtles had died by the time the crew arrived, quick action with knives and a set of bolt cutters set the fourth free.

"We thought they were all dead," said Chapman. "It was obvious from the tissue discoloration that at least three of them were already dead." The RHIB crew was so convinced that all four of the turtles were dead that they almost left the scene. "We circled around one last time and were about to leave when someone noticed a snort from one of the turtles. It was only then that we realized we had a second chance to help," said Chapman.

The RHIB crew then began to try to pull the net out of the water and into the boat. "After about 15 minutes, we needed to re-think our approach once we realized just how large the net really was," said Chapman. "If I had to guess, I would say that the net was between a quarter to a half-mile long."

"Two of my Sailors held the net out of the way so I could get close enough to start cutting it away from the sea turtle," explained Chapman. "I just happened to be in a position where I was close enough to do something. As I got closer, I could see that there was

Seven Sailors from the USS Thorn use a Rigid Hull Inflatable Boat, bolt cutters and knives to a sea that had become entangled in a fishing net. Thorn was headed in the direction of the entangled turtles when they were spotted by a ship's helicopter.

U.S. Navy Photo by IS1 Thomas Freeze

Sailors from the USS Thorn attempt to save a sea turtle from a fishing net. With the net wrapped tightly around the turtle's neck and front flipper, the crew worked for almost two hours to free the turtle. The Thorn was headed in the direction of the entangled turtles when they were spotted by a ship's helicopter.

U.S. Navy Photo by IS1 Thomas Freeze

netting around his neck and his front flipper. He also had one of the large aluminum net hooks embedded in his mouth. After he snapped at me once and just about took my hand off, I started cutting away at the netting around his neck."

"Once we finished cutting away the netting from around his neck, he began to breathe easier. We then began to work on his flipper, which had about fifty turns of netting around it. You could tell that the netting was cutting off his circulation. It took us a little while, but we eventually managed to free his flipper," said Chapman.

"There was no way to really get at the turtle while he was in the water, so we decided to haul him into the boat," added Chapman. "Once on-board, we managed to remove the hook from his mouth. We all felt better once we removed the hook. And I can only imagine how much better the turtle must have felt."

At that point, the RHIB crew put the turtle back in the water and watched it until they were sure it was going to be alright. "At first he didn't look very good," said Illner. "He had been through a lot and was under a lot of stress."

"But once he got going," added Chapman, "he started diving and swimming. I had been concerned about his flipper, but it didn't seem to be giving him much trouble. We watched as he made one last dive. Just as we started to leave, he came back up and looked in our direction as if to say thanks and goodbye. "

The entire operation took ten people almost two hours to complete. But it was well worth the effort. "We take all of our environmental responsibilities seriously," said Chapman. "We share the same oceans with all sorts of living creatures and want to do our part to preserve it and protect its occupants. We had an opportunity to help a sea turtle in trouble. I'm certain that the crew from any other Navy ship would have done the same."

Seven Sailors aboard Rigid Hull Inflatable Boat launched from the USS Thorn use bolt cutters and knives to free a sea turtle entangled in a fishing net. The Thorn was headed in the direction of the entangled turtles when the crew aboard the ship's helicopter spotted them.

U.S. Navy Photo by IS1 Thomas Freeze

POC:

- Jeremy Johnson
- U.S. Sixth Fleet Public Affairs
- (Italy 39) 0771-709-994/637/620
- DSN: 627-994/637/620
- c6fpao@c6f.navy.mil

Navy Environmental News
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Navy Environmental News

NAVSTA Newport Provides Free Bilge Socks to Recreational Boaters

Naval Station (NAVSTA) Newport is hoping hundreds of boaters will "put a sock in it" this season.

NAVSTA Newport's Morale, Welfare and Recreation Department, and the Environmental Protection Office, will be offering free bilge socks to civilian recreational boaters at the NAVSTA Newport marina, using as a precedent a similar program implemented last year by a civilian organization in Buzzard's Bay, MA.

The bilge sock is a hydrocarbon-absorbing, 2-foot long, 3-inch diameter sausage-like object that is placed in a boat's bilge compartment in order to capture leaking engine and crank case oil, as well as small fuel spills.

The socks, which are distributed at the marina, are made from plasticizing polymer compounds, which are the same materials used for emergency spill response. Each sock can hold up to 1.5 quarts of oil without dripping or releasing oil when squeezed; and the sock will neither shift around nor interfere with the function of the bilge pump.

The socks are seen as an inexpensive, proactive preventative measure. At between $10 and $12 apiece, they are much more cost effective than cleaning up oil and fuel spills, which requires a considerable amount of both manpower and equipment.

Oil spills sometimes occur as a result of oil-contaminated bilge water being pumped into bay waters during routine bilge pumping.

Considering that any oil or fuel spill that creates a rainbow-like sheen on the water is cause for an $11,500 fine by the Coast Guard, a free sock is a pretty good deal. If the boater's engine is in reasonable shape, the sock should last all season.

At the end of the season, or when they are full of oil, the socks are to be returned to marina personnel, so officials can track the number of socks used. Boaters will know the socks are full of oil because the socks will resemble a rubber sausage.

"It's gratifying to know that, in our own way, we're helping to keep a portion of Narragansett Bay clean," said NAVSTA Newport Public Affairs Officer Dave Sanders. "If we all look for ways to make an impact—however small it may seem—we can effect change on a global scale."

Navy Builds Park from Old Missile Site

What once was home to Cold War weapons now will be an area filled with the relative peace of competing youth sports teams.

The United States Navy has spent almost $10 million in converting an old missile site into a public park.

In Vernon Hills, IL, just shy of 40 minutes northwest of Chicago, what was once a Nike missile site is being redeveloped to include baseball and softball diamonds, 16 soccer fields, a 1,500-seat stadium and other facilities. Forty-six acres will hold trails, picnic areas, an interpretive center and a playground; and nearly three-and-a-half miles will have paved bike paths and nature walks.

The area is now 95 percent cleaned up, said Mark Schultz, environmental director of the Engineering Field Activity Midwest, and the entire park project should be completed by 2003.

Part of the cleanup involves the removal of old landing strips. 58,000 tons of material will be recycled and used in the construction of parking lots and roadways.

Of the 164 acres, 50 acres will be deeded to Vernon Hills High School for ball fields and 50 more acres will go to Stevenson High School.

NAVSTA Pascagoula's Solution Well-balanced

In the middle of a salt marsh in the open waters of the Mississippi Sound in the Gulf of Mexico, an island once overpopulated by gluttons is now more environmentally balanced.

The 400-acre Singing River Island, on which the Naval Station Pascagoula, MS is located, at one time was under siege by hordes of rabbits.

Due to the amount of grass on the island and lack of any natural predators, the rabbit population—-along with the burgeoning nutria population—on Singing River Island exploded unchecked, covering the island in fecal pellets and causing thousands of dollars in damage to the Navy's ornamental plants.

Numerous methods of ridding the island of the rabbits were considered.

Meanwhile, farmers in northern Mississippi were having a problem with nuisance bobcats that were raiding livestock.

In an ingenious idea to help both sides, bobcats, natural predators of both rabbits and nutria, were brought to Singing River Island.

That was in 1995. Today, Naval Station (NAVSTA) Pascagoula resides in ecological harmony, with fewer rabbits and nutria, and two well-fed bobcats.

"We are no longer losing ornamental plants to rabbits," said NAVSTA Pascagoula Environmental Manager Tom Sarros.

In fact, by just a year after the introduction of Beauregard and GIRT (Government Issue Rabbit Trap)—-the two bobcats-—the number of both rabbit and nutria droppings on the island had decreased from over 12 pellet piles per square meter to just over three.

"That was a significant reduction in rabbits, for it to drop by that large of an amount," Sarros said. There has been "a significant reduction in the damage to vegetation and a reduction in the amount of rabbit and nutria droppings."

Not long after the bobcats were introduced to the island, Beauregard disappeared and his tracking collar was never found. An as-yet-to-be-named replacement bobcat was brought in.

These days, the radio transmitter tracking collars have been eschewed for "scat tracking"; or, in other words, monitoring the bobcats' feces to tell where they've been and how long ago they were there.

Sarros said no problems have been encountered with this natural solution.

"I feel great about this project," he said. "We saved the bobcats' lives, brought an out-of-balance ecosystem back into balance and reduced the cost of maintaining ornamental plants.

"This wasn't a win-win situation, this was a win-win-win situation."

NAS Patuxent River Minds Chesapeake Bay

The Chesapeake Bay Watershed is located, quite literally, in the backyard of Naval Air Station (NAS) Patuxent River, which takes full advantage of the bay's waters and surrounding environs as part of the station's day-to-day operations.

Thus, the importance of keeping the bay clean and clear of pollutants is not lost on NAS Patuxent River. That is why NAS Patuxent River has become a member of Businesses for the Bay.

A voluntary organization made up of local industries, commercial establishments and small businesses, Businesses for the Bay is dedicated to keeping the waters of the Chesapeake Bay Watershed free from pollution and reducing the amount of chemicals released therein.

"The Navy is already reducing toxic substances throughout the lifecycle of our aircraft," said Mark Luncher, NAS Patuxent River Operational Environmental Planning Office program manager. "Patuxent River is playing an active role in that process as well as smart facility management to promote good environmental stewardship."

As an activity through Businesses for the Bay, NAS Patuxent River has provided two mentors-—Lasandra Teeters from the Public Works Department and Kyle Rambo from the Natural Resources Department—to serve as a peer-to-peer "question and answer" resource for business, industry and others, completely outside of the regulatory arena.

Other Navy organizations taking part in Businesses for the Bay include the U.S. Naval Academy and the Naval Surface Warfare Center (NSWC) Indian Head Division. The U.S. Army Aberdeen Proving Ground also has joined Businesses for the Bay.

"We appreciate their early participation in this program and hope other federal facilities in Maryland will follow their lead," said Laura Armstrong, pollution prevention coordinator with the Maryland Department of the Environment.

As a member of Businesses for the Bay, NAS Patuxent River will have the opportunity to apply for annual Excellence Awards.

Since 1997, Businesses for the Bay participants have reported the reduction and recycling of 1.87 billion pounds of materials, amounting to a savings of $9.9 million. In Maryland, this amounted to 1.1 billion pounds of materials and $6 million in savings.

"These numbers are a testament to the fact that a 'prevention first' approach works and saves money," Armstrong said.

Web Enabled

All the web sites in this issue of Currents

Article	Page	Web Site
Have Training - No Need to Travel	5	http://www.cecos.navy.mil
SERDP and ESTCP to Host Annual Technical Symposium and Workshop	7	www.serdp.org or www.estcp.org
NEAT News Expands	7	http://www.denix.osd.mil
GTMO Bird Populations	11	http://www.birdpop.org
A Safe Haven for Wildlife	13	http://www.scz.org/iguana
You Can't Win If You Don't Enter	17	www.enviro.navy.mil/N45
Combating the Spread of Invasive Species	20	www.denix.osd.mil
A Plan to Protect Coral Reefs	23	www.denix.osd.mil
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CECOS Announces Natural Resources Training Program	48	http://www.cecos.navy.mil
Announcing the New Joint Service Pollution Prevention Technical Library Homepage	back cover	http://enviro.nfesc.navy.mil/p2library

Make Contact With the Navy's Natural Resource Program Managers

As a necessary element of this special natural resources issue of Currents magazine, we have provided the contact information for four of those persons charged with managing components of the Navy's natural resources programs. We encourage you to contact these individuals to discuss matters of policy, guidance and program implementation.

Chief of Naval Operations
Environmental Protection, Safety and Occupational Health Division (N45)
- Joe Cook
- Natural Resources Program Manager
- 703-602-5335
- DSN: 664-5335
- Cook.Joe@hq.navy.mil

Commander-in-Chief,
U.S. Atlantic Fleet (CINCLANTFLT)
- Ann Young
- Natural Resources Program Manager
- 757-836-7147
- DSN: 836-7147
- YoungAE@clf.navy.mil

Commander-in-Chief,
U.S. Pacific Fleet (CINCPACFLT)
- Conrad Erkelens
- Natural Resources Program Manager
- 808-471-5455
- ErkeleCL@cpf.navy.mil

Naval Facilities Engineering Command Headquarters
- Joe Hautzenroder
- Natural Resources Program Manager
- 202-685-9331
- DSN: 325-9331
- HautzenroderJE@navfac.navy.mil

NAVAIR Releases Series of Wildlife Posters

Posters Developed in Cooperation with the Florida Aubudon Society

The Naval Air Systems Command (NAVAIR), in cooperation with the Florida Audubon Society, has released a series of four-color posters of wildlife indigenous to the Florida coastline. These four posters include photographs of Sandhill cranes, a Great Egret, a brown pelican, and a family of eagles.

Claudine Laabs, a contributing photographer and active member of the Florida Audubon Society, took all of the photographs that were used for these posters.

You can download electronic copies of these four posters from the NAVAIR environmental web site at https://www.enviro-navair.navy.mil. Hardcopies of each of the four posters measure 15 by 22 inches and can be ordered from Karen Maraschino at MaraschinoKD@navair.navy.mil. Please provide your complete mailing address when submitting your request.

Announcing the New Joint Service Pollution Prevention Technical Library Homepage

The Joint Service Pollution Prevention (P2) Technical Library has recently been expanded and enhanced to offer extended functionality and navigation and additional content. A comprehensive resource for information on equipment, technologies, and management practices that reduce or eliminate the generation and disposal of pollutants at Joint Service installations, the Library received the prestigious 1999 White House Closing the Circle Award for its outstanding content and utility. The Library was established through a collaborative effort of the Navy, Army, Air Force, Marine Corps, the Defense Logistics Agency (DLA), the U.S. Coast Guard, and the Joint Group on Pollution Prevention. The Library now offers upgraded search functionality that provides rapid and efficient access to a host of economical pollution prevention strategies for facility and operations managers.

The key elements included in the P2 Library are:

- The P2 Opportunity Handbook of more than 200 processes materials and management practices including new sections on bio-based products and sustainable design,
- The Navy's P2 Equipment Book, covering more than 100 P2 technologies,
- The Joint Group on Pollution Prevention information and guidance,
- DLA's Environmentally Preferable Products Catalog,
- The Field Activity Support and Technology Transfer (FASTT) case studies and lessons learned based on information from joint services' shops and depots worldwide, and
- The new Propulsion Environmental Working Group (PEWG) forum, with insights from Department of Defense and original equipment manufacturers (OEMs) from the propulsion industry.

The Library also presents searchable fact sheets concerning key processes and operations and more than 100 P2 and compliance related documents and reports from throughout the joint services, U.S. Environmental Protection Agency, DLA, and other sources.

The P2 Library is accessible at: http://enviro.nfesc.navy.mil/p2library and is also available on compact disk by contacting the P2 Library Manager at: p2_library_manager@nfesc.navy.mil

Commanding Officer
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